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ETC.

JACK LINDSAY

Marxism and Contemporary Science

or

The Fullness of Life

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Note

THIS work is a critical examination of the Hegelian and the Marxist Dialectics in the light of contemporary science. In particular I have tried to examine the findings of biology and psychology, and to relate them to the problem of an adequate concept of process. If nothing else, the book should dispose of the notion that a Marxist is afraid of the most fundamental reconsiderations of theory.

The essays were not all written in the order here given. That on Anthropology was first written ; and that on History last. In many instances, after completing a section, I found an important work which helped me to clarify what I was trying to say. Thus, it was most encouraging when in the first draft of the essay on Biology I ended with stating that the unitary approach would bring forward certain problems of the development of the cell. Then, discussing this point with Cedric Dover, I found that in fact Ernest Just had covered the main problem I had stated. Again, after beginning to formulate the attitude which would integrate Gestalt method with the full processes of aesthetic construction and moral development, I found that Sylvia Anthony had already opened this track. Such discoveries made me feel that the unitary approach must indeed have a clarifying virtue, and that I had not been too presumptuous in attempting so large a sphere of reference.

Above all, I must express gratitude to Lancelot Whyte, whose *Next Development in Man* was brought to my notice by Mulk Raj Anand just at the moment when I was myself moving towards something of the same approach. The reading of that book, with the most stimulating effects of conversation with Whyte, has had a decisive influence, I feel, in bringing my thoughts to their final focus. Another debt I must emphasise is to Dr. Robert Silver, who has had patience in helping my ignorance to grapple with the problems of Statistical Thermodynamics; and I must thank Prof. Gordon Childe for reading the chapter on Anthropology. Finally I owe much to Alick West, both for reading the whole manuscript and for discussions over the last three years of the new basic emphases needed by Marxism in our period. Responsibility for the formulations here made is however entirely my own.

References in the footnotes are to the books in Bibliography at the back—thus, *Whyte* (*a*) refers to *Whyte* (*a*) *The Next Development in Man*, 1944.

Second Note

THIS book was written during the latter part of 1946 and the early part of 1947 : that is, before there was any detailed information available about the postwar discussions on Marxism in the Soviet Union.

Now that I have been able to get closer to what were the vital issues of those discussions, I feel that I can claim this book to be largely in the same key. The angle of approach is quite different. I have set out to draw together all the elements I could see in world science, art and thought making for a new comprehension of dialectical unity, of Marxism. The Soviet Union is tackling, in terms of its own cultural inheritance, the problems raised by socialism coming of age there. But despite many differences in terminology I feel safe in declaring that my findings converge on the same point as that for which the Soviet arguments are making.

These circumstances seem to me to give a significance to this book which I did not have in thought when I started on it as a lonely venture of exploration.

In particular I should like to draw attention to the substantial accord between my sections on Biology and the position of Lysenko. Again, the approach differs, yet the conclusions closely converge. The whole point of my analysis is that post-Mendelian genetics are mechanistic and that the next step must come through a fuller realisation of the unity of the organism. More, I emphasise that the post-Mendelian notion of Mutation is mechanistic and that a radically new attitude to environmental influences is needed.

If, then, there is any validity in my case, Lysenko is fundamentally on the right track and has opened up a new era in Biology. What remains is the working out of the full interplay between environmental influences and the stabilities of the organism.

I hope, then, that this book has done something in a pioneer way to show that the crisis in thought represented by Lysenko in the U.S.S.R. is no isolated phenomenon or (as its enemies insist) the result of 'State Interference' in Science, etc. At root that crisis reveals the need to leap into a new realisation of the unity of dialectical relations—a need derived in the last resort from the total cultural development of the Soviet Union, the level of mass-development. It is a crisis that exists in our own cultural inheritance and must grow yet more acute.

as we move towards socialism and its necessary transformations. The terms are not yet quite the same, for inheritance and situation are not the same. But the ultimate convergences are on the same point, the same future.

If I were writing my thesis now, I should use a slightly different idiom, aimed at bringing out the link between my quest and the Soviet movements. However I trust that the differences in starting-points will not obscure what I feel to be a basic agreement. Let me specially emphasise that this book does not try to lay down the law on anything; it seeks only to raise key-points for discussion.

J. L.
December, 1948.

CHAPTER ONE

Dialectics of Unity

By DIALECTICS I mean a Logic capable of dealing with life and the world as process, and therefore closely related to the movement of scientific thought. For, taken in its entirety, the scientific thought of any period represents the extent to which the real nature of the processes of life and the world have been grasped; and out of the particular discoveries and their methodologies must emerge a general methodology, a general concept of cause and effect, the nature of relationship and movement, the forms of development. This general concept has so far appeared in conflicting philosophies, which seek to express the most complete view of reality possible at that point in history. The limitations and conflicts in this field can be related to the degrees of success and failure, of correlation and division, in the scientific field. (In the full picture we should have to take into account all the human activity of the period. I am not suggesting that philosophy has been a mere reflection of positions reached in science. All I am stating is that there is an inescapable relation between science and philosophy at any given moment.)

Painfully, after aeons of effort, men attained the system of deductive and inductive logic out of which they could construct the first scientific controls and investigations of phenomena. But the concepts of identity and difference in such a system are inevitably mechanical, static, quantitative. They are ultimately based in dissociation and lead to the enthronement of abstractions as the basic elements of reality. They divide off body and soul, mind and nature, necessity and will. Yet no other way could men, struggling to control nature with more than insufficient means and only dimly aware of their own selves, lay hold of things and processes. For all the while, fighting hard to hammer out an instrument for keeping the fluid world still and obedient, men were in fact dealing with processes. Throughout their thought the conflict appears: a logic of dualistic trend seeks to find stable forms of identity, yet has to admit the intractible nature of process which insists on confusing the clear schemata. Thought has been a continual series of such admissions. Each

extension of the scientific instrument has enlarged the area open to schematisation, but at the same time has deepened the sense of process.

I do not intend here to deal with the whole story of this conflict. I am concerned only with the two important attempts made in the modern world to achieve a logic of process—the Hegelian and the Marxist—and the extent to which they provide a logic capable of handling the complex material of contemporary science and of resolving effectively the oppositions of identity and change which have bedevilled all past systems of thought. Before I pass on, however, I shall cite the statement by L. L. Whyte of the basic conflict of those past systems:[1]

> When primitive man began to develop rational systematic thought, static nouns formed the primary tools of thought, while the characteristics of process were represented only by vague implications. But any particular group of static nouns could represent only the apparently permanent aspects of a particular process and had to be supplemented by a complementary group referring to process aspects. For example, at one stage of thought, the group of inert material things had to be supplemented by a group of conscious spirits capable of purposive action. Similarly during the development of scientific thought the permanent spatial frame had to be supplemented by pure duration.

These considerations are essential to the understanding of any type of highly civilised man, and in particular of European man.[2] Intellectual dualisms constitute a biological maladaptation, and their roots lie in an organic situation beneath the level of systematic thought and influence every aspect of behaviour. This separation of static and process concepts is the source of all intellectual dualisms. On the one hand there are static concepts, developed first and capable of systematic and precise formulation. On the other hand, the process concepts, remaining relatively vague and formless, but accepted as referring to the asymmetry of the time sequence and therefore expressing a fact central to all human experience though relatively neglected by systematic thought.

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[1] Whyte (a) 58f. I cite this as being (I think) generally correct; but a detailed examination of language would reveal a much more complex situation than it allows for. Primitive language shows a confused but omnipresent fusion (as well as conflict) between 'identities'. *Man* and *Nature*, *We* and *I*, are still felt as unities. This element was never lost; but thought and language go through a continual series of crises in the fight to abstract and yet to relate vitally, to separate and to bring together. A purely dualistic system would have destroyed men, turning them into pure schizophrenes. But, taken broadly, Whyte's statement defines the ceaselessly shifting conflict which has gone on in men—a conflict of thought related in turn to social organisation and psychosomatic processes—though Whyte tends to state it as purely a problem in intellectual values.

[2] 'European Man' is of course merely 'industrialised man'—i.e. man at the culmination of the stages of capitalism with all their vast correlations in culture.

The object set in space and formed of matter follows the necessity of quantitative law. Hence the world of permanence, precision, and clarity. With these instruments man emancipates himself from his treacherous subjectivity. He hypostasises, or establishes as real entities, the permanent features which he has abstracted from process, dividing nature in order to master it.

But man cannot think by these alone. The subject experiences memory in time and the freedom of his purposive will. In these conceptions man struggles to express the central fact neglected in the static picture. He fails because a dualistic language cannot express the true form of his unity with the processes of nature.[3]

II

If this formulation is correct, then the problem of Unity is obviously of central importance. If the ceaseless conflict inherent in all past thought is to be resolved, and if we are to create a system of thought, a language, adequate to the vast vision of the unity of process provided by modern science, then we have above all to be clear as to the significance of Dialectical Unity.

We have all been learning a little Marxism; we have been learning how and when it is possible to unite opposites. Even more important is the fact that the Revolution has compelled us to be constantly uniting opposites in practice. But let us remember that these opposites may be united so as to obtain either mere discords or a symphony.[4]

So wrote Lenin after the 1917 Revolution of the experience that was being gained; but his remarks are applicable to any and every effort to realise truth in its fullness and effectively develop human activities.

Lenin thus states the same issue in more abstract terms:

Dialectical 'moment' requires an indication of 'unity'; i.e. of the connection of the negative with the positive, requires the finding of this positive in the negative. From affirmation to negation—from negation to a 'unity' with the affirmation; without this, dialectic becomes a barren negation, a word-play or scepsis.[5]

And again:

Neither barren negation, nor purposeless negation, nor sceptical negation, nor vacillation, nor doubt are characteristic and essential in dialectic, which undoubtedly does contain in itself the element of negation

[3] McDougal points out the tendency of psychologists to treat an emotion as a thing, 'indulging our natural tendency to reify whatever we name.' (a)314. Bergson is making the same point in asserting that 'intellect' is better equipped to deal with spatial than with temporal relatives—i.e. the 'real' is thought of as timeless—as a spatial constellation at a moment of time (i.e. at no time at all).

[4] See Shirikov, 169.

[5] Lenin (b) ix. 287.

and moreover contains it as the most important element—No, this element of negation is a moment of connection, is a moment of development with a retention of the positive; i.e. without any vacillations, without any eclecticism.[6]

For the moment I am not concerned with the analysis of terms. It is enough to point out that Whyte, who begins as a physicist and finds himself driven to demand a unitary system of thought, and Lenin, a Marxist revolutionary who seeks to grapple in full activity with the human problem, both converge on the same point. The discovery of opposites is frustratory unless it is always resolved on the discovery of the unity of process in which the opposites exist. For Whyte this means the salvation of men from a permanent source of maladjustment and discord; for Lenin it means the overcoming of a radically obstructive or regressive element, the achievement of a new harmony, the crystallisation-out of the 'positive'.

III

Let us now make some elementary applications of this concept of unity.[7] Take any society. There must be a living unity at work in it all the while, or it would fall apart. A functioning society must be a unity; otherwise it would be a disintegrating collection of warring units and would dissolve overnight. Marx made this point succinctly in *The Holy Family*:

> Proletariat and riches are contradictions; as such they form a united whole. Both of them are brought forth by the world of private property. The question is, what definite position does each of these two opposites occupy in the contradiction.

Marx is dealing with capitalist society; but the same principle applies to all societies. Whatever contradictions rend them, they have an overriding unity. Capitalist society, for instance, is made up at any given moment of a vast number of intertwining social relations and functions, which constitute its living unity of movement. If we distinguish two main bands running across that complexity and slowly separating out, yet these two main

[6] Lenin (b) ix. 285. Lenin always insists: 'It is necessary to unite, to connect, to combine the general principle of development with the general principle of the unity of the world, of nature, of movement, of matter, etc.' See Shirikov, 26.

[7] I take over the term *Unitary* from Whyte. By it I mean the approach which seeks to find which aspects of process are integrally related (are 'opposites' in the Hegelian sense) and how the 'contradictions', the conflicts or disequilibria, are resolved within a unifying grasp. In human life the attempt to achieve this unitary grasp of physical process is always bound up with the problems of overcoming a conflict (personal and social) and actively stabilising the species. (*Unitary* thus means here what Marxists have meant by calling Marxism

bands and all the subsidiary and modifying ones combine functionally to make up a single society.

The moment we forget this vital fact, we forget the enveloping unity in which all struggles rending the society take place. We distort the whole historical situation and treat contradictions in a mechanical way. As Marx said:

> The owning class and the proletariat represent the same human self-alienation... The former possesses through it the *illusion* of human existence.[8]

The entire analysis by Marx of what he calls the Fetichism of commodity-production is based on this concept.

IV

Keeping this point clear before us, we can better understand what Marx meant in declaring that the main movement inside capitalist society was an increasing conflict between socialised content and monopolistic form. That is, between the increasingly co-operative way in which industry and distribution are built up, and the continual narrowing-down of the class which exercises control of production.

We certainly do not understand him if we think he means a simple, stark separation-out. Only in a high moment of Revolution could that happen; and such a moment would be the moment of transformation leading straight into new functional unities. Throughout the process of increasing contradiction, the unity is also being heightened.[9] Men are being drawn closer together, proletariat and monopolist alike. But at the heart of that socialising process lies the monopolistic contradiction. That is the whole point on which the essential conflict of the society depends. Precisely because the unity keeps intensifying, the contradiction becomes more acute.

[8] See Slochower (a) 269. William Morris was one of the Marxists who kept this view steadily before him. 'The contrasts of rich and poor are unendurable and ought not to be endured by either rich or poor. Now it seems to me that, feeling this, I am bound to act for the destruction of the system.' See Arnot.

[9] Bruno Bauer, Young Hegelian, in his attack on Strauss's *Life of Jesus* declared that with the breakdown of the Greek world the ego was 'alienated' from itself; terrified of its own power, it represented that power as something alien, outside itself. So the Stoic efforts to lead the self into a safe inner world failed; Christianity set up the image of the alienated power Christ-God, a hostile brother of the Imperium. Under the Christian slavery men trained themselves for the return of freedom on a fuller basis. 'The eternal consciousness of self, realising itself, understanding itself and comprehending its essence, had power over the creator of its own alienation.' Mehring (a) 24. Though idealist, this had psychological subtleties and helped Marx to his more fully dialectical concept of Alienation, to which Hess and Feuerbach also contributed. 'The factory... the highest form of capitalist co-operation', Lenin (a) ii, 442.

We may, then, if we wish, speak of Shakespeare as a poet of the people, a mass-poet, if we are using the terms *people* and *mass* in this broad way—if by them we mean everyone who is functionally contributing anything to the unity of society in Shakespeare's day. Indeed, there is point in using some such term to distinguish him from some lesser poet of the period who grasped a much smaller section of the conflict and harmony of himself-and-society and who may therefore be described with some limiting label. But even in dealing with the lesser poet we must remember that in so far as he is creative he is intuiting something of the unities to which Shakespeare can give his vast comprehensive definition.[14]

It is important to realise the ways in which Shakespeare is bound up with the life and thought of his period. Every such extension of realisation helps us to get at grips with the full tensions and resolutions of his work. But the final problem is to absorb and understand his poetic and human definition—to see why he remains so gigantically significant as a poet of human life. Marx has stated this point in a different context:

> The difficulty is not in grasping the idea that Greek art and epos are bound up with certain forms of social development. It rather lies in understanding why they still constitute with us a source of aesthetic enjoyment and in certain respects prevail as the standard and model beyond attainment.[15]

VIII

Our first simple applications of the concept of dialectical unity to society and art have cleared up a number of points which are usually clouded by failure to begin with this fundamental concept. In this book it is my intention to continue bringing the concept of unity to play on various crucial matters of modern thought, and find where it leads us. I shall throughout have two main aims: firstly to keep testing out Marxist formulations to find out how far they have remained true to this key-concept

[14] Lenin in Oct. 1913 put forward much this position in his *Critical Notes on the National Question*, 'In *each* national culture, there are *elements*, however little developed they may be, of democratic and socialist culture; for in *each* nation there is the labouring and exploited mass, whose conditions of life inevitably bring to birth a democratic and socialist ideology.' (Lenin (b) xvii. 136f.) It follows that the artist, expressing the unity of his society, must embody the conflict and fusion of these mass-elements with the upper cultural levels.
Engels in his excellent comments on Goethe implies a unitary approach. 'We do not make him in general reproaches from a moral viewpoint or from a party viewpoint, but at the most from an aesthetic and historical viewpoint,' etc. (Engels (d) vi. 56-8).

[15] Marx (c) 311f.

of dialectical understanding, and secondly to find how far the developments of modern science help us to enrich and clarify the concept itself.

Lenin has emphasised the way in which certain aspects of dialectical logic become more important at different times.

> Our doctrine—said Engels, referring to himself and his famous friend—is not a dogma, but a guide to action. This classical statement stresses with remarkable force and expressiveness that aspect of Marxism which is constantly being lost sight of. And by losing sight of it, we turn Marxism into something one-sided, disfigured and lifeless; we deprive it of its living soul; we undermine its basic theoretical foundations—dialectics, the doctrine that historical development is all-embracing and full of contradictions; we sever its connection with the definite practical tasks of the epoch, which may change with every new turn in history . . .
>
> The aims of direct and immediate action have changed very markedly during this period, just as the concrete social and political situation has changed—and consequently, in Marxism, too, since it is a living doctrine, various sides were bound to come to the fore.[16]

This modest and penetrating warning should be kept continually in mind by all honest thinkers who are seeking for a comprehensive instrument of thought. Bearing it in mind, let us turn to glance back at the conditions under which Marx arrived at his basic ideas.

IX

In October 1842, Marx, aged 24, became editor of the *Rheinische Zeitung*, a leading radical paper. It was during this time that he forged ahead from being a lively disciple of Hegel into a 'philosophic communist'. His experience as editor gave him the point of active contact with affairs which he needed to develop his concepts into living fullness. 'He sought to build the paper into a political force, and in the process was himself educated.'[17]

In defending the freedom of the Press, he realised with a new active urgency the relation of spirit and society. The Press (i.e. expression), he declared, 'is the ideal world, which constantly wells out of the real world, and more richly endowed, streams back into it, bringing new inspiration.'[18]

Having escaped from abstract categories, he has discovered the vital relationship of spirit and the 'real world'. He finds

[16] Lenin (a) xj. 53 (written Jan. 1911 on 'a most serious inner crisis' of Marxism).
[17] Pascal, 12.
[18] Pascal, 21.

The highest human aim is 'the association of free individuals'. That aim follows from the basic nature of man, his need to achieve both freedom and universality.

The indictment of capitalism, of class-society, is that it cuts across this need and prevents men from being either really free or universal. It constricts the human process and distorts it, though it cannot destroy it. The protest of the proletariat, he holds, should be that capitalism contradicts their 'human nature'. Capitalism seeks to convert the 'personal individual' into the 'class-individual'.

These generalising statements are not of course meant to be taken as absolute statements. Capitalism cannot impose its concepts on society and the individual in such a way as to drive out all other values; or society would cease to exist. If people were ever only 'class-individuals', they would cease to be human at all. They would be economic robots, who in fact are unthinkable except in a nightmare. What Marx means is that under capitalism there is a ceaseless struggle between personality and class, between human nature and the economic system. The need to be free and universal is twisted into particular objectives of personal or class advantage. Yet this struggle is at the root of the historical struggle, the degree of unity attained between man and nature. The capitalist system, which is deforming the human essence, is also driving ahead by its socialising developments, its increased control of nature, into new harmonies of freedom and universality. This stimulation of the basic human need is what in the end must destroy capitalism; for the stimulation will go on at a faster pace than the system can satisfy. The socialising movement is bound up with both an increasingly monopolistic tendency and an intensifying liberation of the human essence.

In his vision of human wholeness Marx is concerned to arraign society for the distorting factors. Under capitalism 'human individuality, human morality itself becomes at once a commercial article and the fabric (*Material*) in which money operates.' Class-societies set a premium on a dehumanised egotistical materialism; capitalism in particular 'estranges man from nature, from himself, his own active functioning . . . from his *universal essence*.' He declares that 'it makes man's *essence* into a mere means for his *existence*.' Thus it 'estranges . . . his spiritual, his human essence', and results in 'the alienation of *man* from *man*'.

Thus Marx had already sketched out the thesis which he put forth later in *Capital*.

We are concerned only with a definite social relation between human beings, which, in their eyes, has here assumed the semblance of a relation between things. To find an analogy we must enter the nebulous world of religion. In that world, the products of the human mind become independent shapes, endowed with lives of their own, and able to enter into relations with men and women. The products of the human hand do the same thing in the world of commodities. I speak of this as the fetishistic character (of commodity-production) . . .[21]

The development of 'true individuality' and 'the truly human', he insists, is bound up with the creation of the classless society which he defines as the 'real appropriation of human essence through and for man'. The problem, he repeats in *The Holy Family*, is:

to organise the empirical world in such a manner that (man) experiences in it the truly human, becomes accustomed to experience himself as a man . . . to assert his true individuality.

Such a development involves 'a new activisation of essential human power and a new enrichment of human nature'.

The goal is man's return to his 'universal nature in a universal manner; that is, as a total human being'.

XI

It will be clear that unless we grasp these originating concepts of Marx's great new departure in thought we cannot keep before us the touchstone of his values. And we can use that touchstone at once to dispel certain simple misconceptions. Thus, Croce declares:

If the transcendental and authoritarian doctrine finds its clear and logical formula in religious transcendence, it has also full right to lay claim to all authoritarian theories of political and moral life, and to the tendencies that go with them, theories which at first sight appear free of any reference to the world beyond and even deny and ridicule it.

Such are especially the various 'socialist' theories (without speaking of 'the atheistic Catholicism' of the nationalists and the authoritarians of France and of other countries, and of similar, preposterous or cynical manifestations). They establish as their ideal a paradise on earth, a paradise

approach. It is to ignore the concept of dialectical unity and to begin with assuming the conflict in society as something absolute. Then, proletariat and capitalists are viewed as forces cut apart as almost distinct species; and nothing can overcome this dichotomy except a leap into some new level, an entirely hypothetical 'humanity', which we can only mystically postulate since it does not yet exist.

[21] This problem, stated here simply, will be explored in Ch. 8 and Pt. 3.

This ideal cannot be translated into actuality except in so far as one wishes to impose it ready-made. It has as its basis the idea of 'equality', understood not as the consciousness of common humanity, which lies at the bottom of liberalism itself and of all true ethics, but as quality conceived in a mathematical and mechanical way. Nevertheless, under these crude and materialistic forms, this ideal hides the enduring appeal of the idea of a realm of perfection without diversities, made up of beings who are all equal before God.[25]

But what does Marx really say and imply? He says that there is a common element in men—an element which began when the first men developed an active relation to nature and which will continue till the end of time. This element is precisely that active relation to nature. It is what he calls the Human Essence. By reason of it man becomes ever more human, becomes more an individual and a social being. This process of becoming human is one of attaining freedom and universality: freedom because it involves an ever-greater sphere of creative activity, universality because it enables men to identify themselves with more and more of the life of nature.

But because this is an active process, a process of spirit as well as nature, it is never a matter of automatic or self-adjusting relationships and balances. For men the actual always includes the potential. In controlling the present men control the future. They plan. Their movement is one of the spirit as well as one of immediate act. They seek to create their own future, and to some extent they do so. They do so to the extent that their will and creativeness is dialectically one with the movements of nature—to the extent that the will and creativeness of the individual is dialectically one with the movements of society. A complex web of cause and effect is woven in the sphere of history and personality. But in so far as men are human, we can generalise their activity as involving a movement towards freedom and universality.

At this point Marx turns to his own society, and asks how the generalisation works out there. He finds an enormous achievement of freedom and universality, out of which emerge the egotistical materialism; capitalism in particular 'estranges man from nature, from himself, his own active functioning . . . from his *universal essence*.' He declares that 'it makes man's *essence* into a mere means for his *existence*.' Thus it 'estranges . . . his spiritual, his human essence', and results in 'the alienation of *man* from *man*'.

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possibilities of a much greater enlargement of the human essence. The possibilities in terms of which he judges existing society and finds it wanting are not categories caught from the air. They are not wish-fulfilments or abstract distortions of history. They are the concrete potentialities of human life in the situation where Marx finds himself. In affirming that men can now take a decisively new control of nature and their own lives he is not appealing to some abstract schemata of thought, some Fate of History: he is simply pointing to what he believes to be facts. Human facts. He is setting the potential against the actual, as men have always done. What is new is this: he claims that men can at last find a fully effective relation between actual and potential, can at last overcome certain limiting factors and achieve a new comprehensive consciousness of purpose.

In saying that, he is swayed by two prime considerations. One is the generalised concept of what goes to make men; the other is the particular historical situation. He believes that men will liberate themselves, will attain an enhanced freedom and universality along certain lines, because those are the lines which the potentialities of the present illuminate. Capitalism has created vast new possibilities of cultural, scientific, economic advance, but in definite ways impedes as well as stimulates the forward-movement and its full working-out. Marx argues that both the constructive and the obstructive aspects will increase in power, and that the lines of the next stage can be guessed at because the lines of the new potentialities can be grasped in the present.[26]

In using or quoting such phrases as a Return into Man's Universality or a Leap from the Kingdom of Necessity into that of Freedom, Marx and Engels were merely drawing attention to what they felt would be the decisive change when the potentialities of the present were realised—when, through the final emergence and confrontation of certain basic contradictions between actual and potential, a new stable unity of life and thought would be created. To treat such phrases as dogmatic abstractions is to deny the whole spirit of Marx's approach. It is to ignore the concept of dialectical unity and to begin with assuming the conflict in society as something absolute. Then, proletariat and capitalists are viewed as forces cut apart as almost distinct species; and nothing can overcome this dichotomy except a leap into some new level, an entirely hypothetical 'humanity', which we can only mystically postulate since it does not yet exist.

[26] This problem, stated here simply, will be explored in Ch. 8 and Pt. 3.

XII

It has been necessary to consider these early formulations of Marx's thought before we consider Marxism in general; for at the period in question Marx was primarily concerned with the whole problem of human history and development. With the advent of the stormy days of the late Forties, he was more and more taken up with direct political issues; and then later with the specific economic analysis of capitalism. By more sharply limiting the areas of his interest he was able to get at grips with many extremely important problems and to make his tremendous impact on history. His mind grew ever more incisive and compelling in its treatment of the subject-matter he chose; but events drew him to choose certain delimited areas of history.

In pointing this out, I am not criticising the use to which Marx put his newly won concepts. In narrowing down his point of reference, he did exactly as he should have done if he were to bring his dynamic realisations to bear on the direction of human affairs. Having fundamentally realised that capitalism involved elements which obstructed human wholeness, he bent all his energies on attacking and exposing the enemy. But because of the nature of the realisation, he sought to attack and expose always in terms of his vision of the truth—his discovery that out of the whole cultural, economic and scientific advance of his world there could be created a subtler and more comprehensive understanding of process. His aim was to grasp capitalism as a total process; and he sought therefore for the most effective instrument of analysis which the scientific consciousness of his day could provide.

And since the actualisation of a potential unity is not merely a matter of working out graphs of social or economic movement, he threw his weight into the organisation of that section of the community which the socialising and levelling pressures of capitalism made the main potential basis for a more harmonious system—the working classes.

He did the right thing, the most powerfully creative thing, in his situation. But his concentration of certain points of his discovery meant less attention to other points. How not? 'Each real advance is paid for', says Whyte, 'by aiming at less in order to achieve more.' And Lenin, 'One step backward, two steps forward.'

But because Marx was right in acting as he did, we are equally right, in our situation, in turning back to his early works and reconsidering his exposition of the wholeness of man. In

Lenin's phrase, with basic changes in the world-situation different sides are bound to come to the fore. Marx's *Capital* has done its primary work in leading to the Soviet Revolution and in giving us the necessary consciousness of capitalism's fundamental contradictions. That work is by no means completed yet. But in the circumstances of the world which has seen Fascism and Nazism built up and destroyed, and which now finds stirring an ever-stronger movement of the peoples into the fuller life obviously possible for all, a new emphasis emerges. The emphasis must be on what unites men rather than on what separates. That does not mean that the peoples can relax in vigilance and that the struggle against the dividing and destructive forces is over. On the contrary, as the atomic bomb is there to remind us, if we need reminding. But increasingly, we must realise, in Pasternak's phrase, what it is that forms, creates and binds men together.

It is one of those moments of fundamental change, of mass-movements in upon new centres of living, when we must think hard in order to clarify what aspects of our thought should come to the fore. Otherwise, Lenin warns us, we deprive dialectics of their living soul.[27]

I do not wish to go here into the political, economic and social factors bound up with this change. But I may briefly point to Lenin's development of Marxism with his concept of the United Front; Dimitrov's exposition of the People's Front; Stalin's analysis of Nationality and its uniting elements. And to the building up of a general anti-fascist front which has brought together a very large section of the peoples of the world in an anti-fascist war; with resulting national fronts of a democratic type, especially among the colonial peoples and some of the countries which the Nazis overran.

XIII

In those early works by Marx, written after he had crossed his Rubicon and made the basic realisation of the unity of process, there is no doubt often a certain largeness of phrase which suggests the German idealist schools from which he has

[27] See Stalin (c), 'It is impossible to move forward and to advance science without subjecting outdated propositions and the judgment of well-known authorities to critical analysis. This applies not only to authorities in military affairs, but also to classics of Marxism.' And he cites Lenin, 'we do not at all regard Marxism as something complete and inviolable; we are convinced on the contrary that it has laid the cornerstone of that science which socialists *must* further advance in all directions if they do not wish to lag behind life.'

emerged.[28] Naturally, the full dialectical complexity of the issues he is raising is not yet noted. But as we read we feel that he has his finger on the pulse of the problem. For the first time in history a thinker is intuiting the unity of process and is keeping at bay the pull to abstract, to accept the intellect's divisions as ultimate categories existing in their own right. Spinoza, for instance, had felt strongly the unity of process; but he had failed to find a satisfactory way of introducing real development into his world. Marx for the first time was able to hold fast to the two concepts of unity and development without falling back on transcendental links and forces.

Here is the great creative moment, the fundamental realisation in Marx's thought. It is a moment which cannot lead us astray, for what it lays down is 'a guide to action', not a dogma. It merely says, 'Go you and do likewise': that is, similarly realise the unity of process and seek to find how it works out. To harden such an injunction into a dogma is to betray it. All it asks is the statement: I accept the truth in its fullness. I have broken through the delimiting and distorting attitudes which deny the living unity, the organic wholeness of man and nature. This acceptance can never become dogma, since every new discovery in science, every new achievement in art, everything which affirms human wholeness, will be an extension of its premises. It is nothing else than the strengthening consciousness of life itself.

Dogmatism appears the moment that any attempt is made to set up any infallible idea or method. All statements, including those of Marx himself, must be related to history, to the struggle for human wholeness and actual circumstances of development. They must be related to the angle and aim of the speaker, and to the questions he is asking and answering. There are absolute elements in human expression, but no human expression is absolute. The moment we forget this fact we become metaphysical and try to fit life into abstract categories.

And the materialist conception of history also has a lot of friends nowadays to whom it serves as an excuse for not studying history. Just as Marx used to say about the French 'Marxists' of the late Seventies: 'All I know is that I am not a Marxist.'[29]

[28] Later I shall discuss some of the difficulties raised by terms taken over from Hegelian idealism. But, throughout, the important thing is to recognise the new use, *the new living fullness*, that Marx is bringing into the abstractions.

[29] 5 Aug. 1890: see Marx (b) 472. Cf. Lenin (in article dated 10 April 1917): 'We, in turn, must understand the tasks and the peculiarities of the new epoch. Let us not imitate the lamentable Marxists of whom Marx himself said: I have sown dragons and I have gathered a harvest of fleas.' – a phrase from Heine.

Engels, who made that comment, thus stated the essential attitude of Marxism:

The great basic thought that the world is not to be comprehended as a complex of ready-made things, but as a complex of processes, in which the things apparently stable not less than their mind-images in our heads, the concepts, go through an uninterrupted change of coming into being and passing away, in which, in spite of all temporary retrogression, a progressive development asserts itself in the end.[30]

The nature of that 'progressive development' needs some discussion; but otherwise the statement has only become more true with every advance of modern science.

XIV

Whyte, for example, deals with the crisis in life and thought which Marx forecast, the decisive moment of movement into conscious acceptance of the unity of process:

Contemporary man is to use science to interpret his own condition and yet to reorganise science in the process of doing so! In so complete a transformation what remains to preserve the integrity and continuity of scientific thought? Science is knowledge in course of organised development. There is no bar to the self-development of science or to its progress into every field while it preserves its single aim: the search for unity in diversity and for continuity in change. Science is the elimination of the arbitrary. An assembly of facts becomes scientific when it is organised as the expression of a single order. Subjective views grow from a single centre, and hence they tend to oversimplify and neglect detail; the scientific attitude recognises the diversity of detail and yet seeks to find a single ordering principle.

He is putting in terms of modern science the development which Marx in the 1840's intuited as inevitably implicated in the researches and discoveries already being made. Marx is vindicated from having relied on some mystical or abstract formula, as the citation from Croce in §xi above infers. His thesis was validly drawn from the movements of thought and life in his day; his prophetic insight was able to see ahead to the point where those movements came to a vital point of transformation.

Whyte continues:

The unitary postulate is the appropriate expression today of the unending search for unity in diversity. It seeks to go to the root of all con-

[30] Engels (c) 54. Note there is no statement made of the relation of world and mental image or of the part played by the image in human reality. All that is said is that image and outer world are all in movement of processes.

fusions, and by bringing logic into conformity with experienced fact to form a cosmos from chaos. It provides the basis of a completed system of thought, not of static categories abstracted from nature, but in conformity with the system of natural processes of which thought itself is part. Moreover . . . it is adapted, as was the analytical method, for use by a particular kind of man living a particular mode of life. The unitary postulate is not one of several methods of equal status. It is the only method which is now appropriate; it is as necessary to contemporary man as the assumption of the quantitative space-time frame was to Cartesian man.[31]

Indeed, a large number of the thinkers—scientists or artists—who have contributed towards the great converging movement, which makes for the unitary outlook, might be cited in accord one way or another with such a statement. I shall, however, content myself with one, the gestalt-psychologist, Koffka:

> Intellectualism is the result of a special field-organisation achieved in our Western civilisation, in which certain subsections of the Ego gain dominance and thereby influence the rest of the field and with it our philosophy. It presupposes a differentiation and isolation of sub-systems, and in a way thereby creates its opposite, just as mechanism creates vitalism. Therefore, again, the adoption of the opposite point of view seems to me no ultimate solution either, because it accepts the differentiation and gives undue prominence to the hitherto neglected part. Certain political tendencies of the present day confirm me in my judgment.
>
> As a matter of fact I believe that a complete renunciation of the intellect will lead to consequences much more dangerous and destructive than its glorification. The radical solution must in my opinion be developed by going behind that differentiation, by unifying what has become severed. Then the Apollinian intellect may well turn out to have Dionysian characteristics and the Dionysian urge be capable of assuming Apollinian clarity. And we should learn to understand why at certain periods, in certain persons, the Apollinian, in others the Dionysian, trend became dominant.[32]

[31] Whyte, 17 and 21. J. Huxley (c, 228) makes a plea for a *unitary* outlook: 'It is one of the prime duties of educated men and women to see that the present duality and antagonism at the heart of what should be the central unity of civilisation—of its most fundamental idea, its conception of the universe—should be terminated.'

[32] Koffka (a) 417. This, with its warning about Fascist trends, was published in 1937.

CHAPTER TWO

Universal Man

MARX, WE SAW, found as an essential element in man the need to universalise, to achieve unity with nature and thereby to realise his own unity. Man by his active relation to nature has separated himself out from nature; and that is the ultimate source of all his dualisms and dichotomies, all his rigidities and fixed concepts. But in so far as his activity is successful he reunites with nature and realises this union in a heightened sense of the reality of process.

To explore the reasons for the complex series of intellectual and spiritual dualisms through which men have had to pass, and to relate that series in turn to the accompanying social divisions, is a work urgently needed. But before it will be possible there must be a further development of anthropology and psychology along unitary lines. Here it is enough to point to the fact that the divisions, social and spiritual, have occurred, and that despite all their effects society has continued and has advanced. Men have moved, despite setbacks and disasters, into an ever-increased richness of culture and organisation. That is, the uniting element has in the long run proved stronger than the divisive; harmony has resolved discord; co-operation has shown itself a more powerful force than competitive antagonisms. Class and caste have crucified the body of human freedom, but could not keep it dead and sepulchred.

To assert the dominance of unity in social organisation is not to deny the role of struggle, conflict, class-antagonisms, and at moments, of revolutionary cleavages. On the contrary. The fact that revolution can mature amid a mass of warring interests and that when it arrives as a necessary moment of transformation it rends society but also reconstitutes it, is the final proof of the intense functional unity at work. Within that unity conflicts or asymmetries must appear as long as development continues, but the formative process moulds them, controls them, and finally integrates them within a new functional whole.[1]

[1] Cf. Lefebvre (b) 222, 'Dialectical method is not satisfied with saying, There are contradictions; for sophistry and eclecticism or scepticism can do that. *It seeks*

II

It follows from Marx's concepts of freedom and universality as the human essence that whatever advances freedom and universalising activity among men is the formative process of individual and society. Mumford's saying the same thing:

> Man's freedom has always been achieved within the co-operative patterns of his culture; not freedom to reject his social heritage, to depart from the human norm, but to select, to modify, to augment that heritage, and to raise the norm . . .
>
> He participates in all the characters of his species, and yet, by the very complexity of his needs, each individual makes over the life-course of the species and achieves a character and becomes a person. The more fully he organises his environment, the more skilfully he associates in groups, the more constantly he draws on his social heritage, the more does the person emerge from society as its fulfilment and perfection.[2]

Whatever facilitates the social process, which includes the intensification of personality, is doing the essential work of forming man. But we cannot leave the matter at so general and vague a statement. We must ask a little more closely what it is that most powerfully facilitates the social process—what it is that most clearly reveals the active attitudes and methods which separate men from the other animals and constitute the basis of their freedom.

What definitely marks men off from the other animals is their productive methods and acts, their economic techniques. The lemur-like creature who seems to have been man's ancestor started off on the long road to humanity when he began to use sticks and stones as tools of production. It seems then that we can safely assert the formative human process works centrally in productive energies, methods, relation. Many schools of thought have put forward propositions more or less along these lines, but Marx stated the point with particular cogency and formulated a law of basic relationship between the productive levels and the stages of human development. Thus, in the Preface to the *Critique of Political Economy*, he stated:

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to grasp the bond, the unity, the movement which begets the contradictions, opposes them, clashes with them, breaks them or surpasses them. Thus in the modern world, examination and analysis show that economic conditions (the very structure of the productive industrial forces) create contradictions between competing groups, antagonistic classes, imperialist nations. The right thing then is to study this movement, this structure, these needs, in order to seek to *resolve* the contradictions. . . . Dialectical contradiction differs then from formal contradiction in that the latter remains in abstract generality, while dialectically one is based in the concrete universal.'

[2] Mumford (a) 7...

In the social production which men carry on they enter into definite relations which are indispensable and independent of their will; these relations of production correspond to a definite stage of development of their material powers of production. The sum total of these relations of production constitutes the economic structure of society, the real foundations on which rise legal and political superstructures, and to which correspond definite forms of social consciousness.

The mode of production in material life determines the general character of the social, political and spiritual processes of life. It is not the consciousness of men which determines their existence, but their social existence determines their consciousness.

The interpretation of that passage depends on the meaning we give to the words *correspond* and *determine*, and to *structure* and *superstructure*. But before I discuss that, I should like to cite another of Marx's formulations. The *Critique* was written in the later 1850's and put into final form in 1857-8. But in *German Ideology*, written in 1845-6, he stated the same problems in the following form:

The social structure and the state must always arise from the life-process of definite individuals, not as they may appear in their own and other people's ideas, but as they really are, that is, as they act, produce in a material way, therefore as they produce under definite limitations, presuppositions and conditions which are material and independent of their will.

The production of ideas, concepts and of consciousness is at first directly interwoven with the material activity and the material intercourse of men, the language of actual life. Conception, thought, the mental intercourse of men, then still appear as the direct efflux of their material relations. The same is true of mental production, as expressed in the language of the politics, law, morality, religion and metaphysics of a people. Men are the producers of their concepts, ideas, etc.—but real producing men, as they are conditioned by a definite development of their productive forces and the intercourse, up to its most far-reaching forms, which correspond to these. Consciousness can never be anything else than conscious existence and the existence of men in their actual life-process . . .

Men, developing their material production and their material intercourse, change along with this their real existence, also their thinking, and the products of their thought. It is not consciousness that determines life, but life that determines consciousness.

At a glance there seems a substantial difference between these two statements. Is the difference real? or is it merely the result of a different orientation of a basically similar idea? In the *Critique* it is social existence which determines consciousness;

in *German Ideology* it is life or life-process. The latter doesn't mention structures, but speaks of the production of ideas.

In comparing and judging these terms we must use Marx's own originating realisation of the unity of process.

III

Production, we said, was the fundamental activity separating men off from the other animals. But what do we mean by production? Clearly we cannot mean the mere mechanism of production; we are concerned with an *activity*, the core of the formative process of the human essence. To think of production as merely a mechanism, a matter of external and measurable matters, reducible to statistics, would be the grossest of abstract levellings. In arguing about production in its historical contexts we must of course use statistics and graphs, and treat the subject from the angle of all available quantitative evidences. But to identify production with the human formative process and then reduce it to a quantitative level would be to blaspheme every truth of Marx's unitary vision. To say that in production we lay our finger on the pulse of human reality is a very different thing from saying that economic modes and relations can be abstracted as the determining force from which spring all the other human characteristics. Such a mechanical statement is the antithesis of Marx's dialectical concept of unity.

When we say that productive activity lies at the root of human life, we mean that production is the necessary spearhead of the human need to master nature. But that is not to abstract it from the wholeness of human beings. Once we look at reality, we find that production by its very nature involves the spiritual life. One is quite unthinkable without the other. Spiritual activity is indissolubly fused with the earliest tentative efforts made by men to control their environment. Unless there had been present in those efforts the first glimmerings of scientific hypothesis and artistic integration, there would have been no act at all. Or at most a flittering semi-automatic act which should have faded away in the animal consciousness without that spiritual relation of cause and effect from which come human productivity.

Engels has pointed out at length the way in which human activity brings into a new level of consciousness the dynamic 'plan' inherent in all organised life.

> We cannot think of denying to animals the capacity for planned, premeditated activity. On the contrary. Planned activity already exists in the germ wherever protoplasm, living albumen, exists and reacts, i.e. where

definite movements, however simple, take place in response to definite stimuli from without. Such reactions occur even where no cell exists, much less a nerve cell. Likewise the manner in which insectivorous plants seize their prey seems in certain respects planned, although quite unconscious. Among animals the capacity for conscious, planned action develops in relation to the development of the nervous system and already attains a high stage among animals . . .

Nevertheless all the planned actions of all animals has not succeeded in impressing the stamp of their will upon the earth. For this man was required.

In short, the animal merely utilises external nature and effects changes in it simply by its presence; man in changing it makes it serve his ends, dominates it. And this is the ultimate essential difference between man and other animals, and once again it is labour which causes this distinction.[3]

Labour, then, he is defining as 'planned premeditated activity' on a higher level than exists among other animals. Central in it is the new awareness of purpose and causality. Abstract the consciousness (with all its deep ramifications through the whole man), and you are back again on the animal level, and labour is inexplicable. Make the abstraction complete, and you dive below into sub-human levels until in fact you go beneath the protoplasm. And you make the abstraction complete if you assert that human history is reducible to productive modes and relationships externally considered.

For a dialectical thinker, it follows, to speak of production as separate from consciousness, from spirit, is to commit intellectual suicide. The spiritual life and the productive act are not two separate things, but are different aspects of the same process, the human process.[4]

IV

Marx has abundantly expressed this unitary viewpoint in the works we examined in Chapter 1. It is the only tenable position for a thinker committed to the full implications of dialectics. From it, then, we must draw the criterion by which we judge statements on particular aspects of process.

In *German Ideology* Marx is careful to state as basic 'the life-process of definite individuals'. The social structure, the

[3] Engels (b) 9f.

[4] Cf. C. Cahen, Le donné humain 'se présente à nous sous une double forme: un corps humain, soumis aux lois physiques et biologiques; une conscience, fait nouveau, en tant non plus qu'agent mais objet de connaissance. Donné double; non pas un corps sans au moins des rudiments de conscience, ni une conscience en soi indépendante de la prise de conscience d'un corps et d'une nature préexistants, non plus que l'action sur ce donné matériel, de la volonté; mais un corps et une conscience-volonté donnés comme aspects indissociables d'une commune réalité.'

State-forms, are an expression of this process (of which they are also a part). The process is the real life of the individuals-of the-group, that life in all its moving fullness, not as it is imagined by the individuals. Will plays its part, but there are always a number of factors independent of the will or consciousness of particular persons.

Ideas are produced as part of the movement of the life-process; they do not emerge out of a universe set apart from the actual world. The two levels—world and spirit, practical act and theoretical concept—are 'interwoven'. Men think and express themselves in terms of a real world, however abstractly or fantastically; and that real world is both the world of nature and the world of work. The realisation of the spirit cannot be separated from the level of productivity and its movements. Life includes consciousness as part of the formative process of man.

Interpreted thus, there is nothing in the passage which in any way contradicts the dialectical concept of unity. But there are a few touches which if taken separately, could be turned into partial conflict with the interpretation. At one point the spiritual life, culture in general and the processes of thought, are stated to be an efflux of the material relations of men. That is a slightly uneasy way of stating the position, since it may be taken to mean a one-way traffic, an absolute priority of 'material production'. But as we saw above, to abstract material production from spiritual activity is at once to sink to a sub-human level and to introduce a dualistic concept into the very heart of our notion of human life. Nor is the situation made any better by presupposing some 'pure' material act, which is followed or accompanied by thought. That is still to be metaphysical and to preserve the dualism.[5]

Again, the phrase 'life determines consciousness' is not quite happy. The term *determine* comes from the mechanical sciences, where such things as position, mass, velocity can be mathematically determined. It is not a word we normally use except when that kind of quantitative exactness of relationship is in question. It suggests that consciousness is mechanically controlled by the 'material world' rather than that it is one aspect of the living whole.[6] Not, I think, that Marx intended any such mechanical

[5] Cf. Cahen, 41, on the falsity of 'the attitude which consists of thinking that material facts are *caused* by spiritual facts or vice versa. There is perpetual interaction, or, to use a better phrase, neither one nor the other, in the human sphere, are ever given pure.'

[6] Lenin does however use 'determine' to mean 'dialectically-connected', e.g. 'In

equation in the least. I think that if we have grasped his central concepts, we cannot fall into such interpretations. But my aim in this book is to sift through Marx's statements with special emphasis on his concept of dialectical unity. The question then arises: Why does Marx use these particular terms in these passages?

V

Marx is certainly not intending to deny the unitary propositions with which he started and which gave him his whole new vision of process. On the contrary, he is seeking to affirm those propositions with stronger emphasis; but he is doing so from a polemical angle which lays special weight on certain factors in development. Or rather, the terms he uses, the answers he gives, depend on the questions he is answering.

R. G. Collingwood has some remarks on Truth, which are relevant to our inquiry. He asks what is ordinarily meant when a proposition is called true; and he answers:

(a) The proposition belongs to a question-and-answer complex which as a whole is 'true' in the proper sense of the word;

(b) Within this complex it is an answer to a certain question;

(c) The question is what we ordinarily call a sensible or intelligent question, not a silly one, or in my terminology it 'arises';

(d) The proposition is the right answer to that question.

If this is what is meant by calling a proposition 'true', it follows not only that you cannot tell whether a proposition is 'true' or 'false' until you know what question it was intended to answer, but also that a proposition which in fact is 'true' can always be thought 'false' by anyone who takes the trouble to excogitate a question to which it would have been the wrong answer, and convinces himself that this was the question it was meant to answer. .

Whether a given proposition is true or false, significant or meaningless depends on what question it was meant to answer.[7]

He points out that the question of truth is thus always an historical question. For only the historical approach can clarify the essential groundwork: What question is the statement meant to answer?

development there is realised the connection (of all parts) of an infinite process,' the necessary connection of the whole world . . . the mutually determining connection of everything,' see Shirikov, 261.

[7] Collingwood (a) ch. v. Cf. Nietzsche (*Will to Power*), 'No one has ever declared: This is, but some later and more precise generation discovers that the words have the sense only of This means.' That is, what is made as an answer to all questions is found to be an answer to certain questions. Lefebvre says a criticism may be true in a relative denial but false when it makes an absolute denial. (a) 7.

What we have to get clear, then, is what question Marx is answering. The *terms* of his answer change to some extent between *The Holy Family* and the *Critique*, with the *German Ideology* as a sort of halfway house. But to understand a change in his terms we must be able to answer the following: Is he changing his mind or changing the question that he answers?

VI

It is impossible that Marx is changing his mind. The vision he attained of the unitary nature of dialectical process in the mid-Forties was fundamental. It gave him the essential key to a great new world-outlook, in which all the contradictions of previous philosophies were resolved. Some of the terms he used to set forth his vision might be criticised one way or another; but the basic fact, the vision of the unity of process, could not be superseded. It can never be superseded.

In the period of *The Holy Family* he is writing in a wholly positive way, out of the heart of his newly-integrated realisation of the wholeness of life. But with the advent of violent days and exile he gets down to a specific task, the analyses of the basic forms and modes of Capitalism. He is in the thick of the fight and stays there. By doing so he makes great gains. He feels his feet ever more squarely on the solid earth of history, and he widens his grasp in many important ways. But he inevitably narrows his interests, no matter how he strives to keep alive his study of poetry and literature, of many non-economic facets of history.

This 'narrowing' was dictated by the historical situation and by Marx's need to get at grips with it. No other way could he have acted so powerfully on history in the light of his guiding passion: to make human wholeness possible by the defeat of class-divisions.

Imagine on the other hand that he had insisted on making himself the philosopher of the realisations he had gained in the latter half of the Forties—that he had gone ahead trying to 'demonstrate in every respect how (in Lenin's phrase) historical development is *all-embracing*; that he had tried to work out his intuition of the unity of process by showing how it applied in all the fields of human activity; that he had wrestled with the problems of the relation of culture to production and had shown in detail how the art and thought of each period was related to the whole movement . . . We have only to state the

supposition to see how ridiculous it is. How could he have done it in any satisfying way? Much of the material which makes such a working-out even barely possible has only been available since his death—the most important part of it only during the last generation. If he had set out to develop his intuition to the full with the material thrown up in the period 1845-60, how prolonged, difficult, and largely frustratory would have been his struggle of scholarship!

He would no doubt have gained an honoured name in the upper levels of philosophy, but he would never have provided the dynamic basis in organising thought which made possible the revolution of 1917. He set himself to use his new-found methodology for a single task, the critique of capitalism—which involved the providing of a broad basis of dialectical thought. A basis which could be grasped by the more class-conscious workers.

It is not that he said to himself: If I let myself wander into unravelling the vast complexity of dialectical threads in history I shall lose my close contact with social and political events. He acted by a deeper compulsion than that—a compulsion which in fact came from the heart of his vision of unity. In order to enter effectively into the direct action of history, he had to shape his unifying vision to a particular purpose. But not by some accident, some wilful distortion or self-sacrifice. On the contrary. His action was dictated by the living core of his realisation; it was in the last resort the proof of that realisation's validity. He took the only path which could make possible the application of his unifying vision on a new and fuller level in all the fields of thought. The steady and certain pressures of history led him towards the particular aspects of elaboration and simplification best suited for most powerfully influencing the immediate future, the post-1850 formations of the working-class. That is, for grappling with human reality.

VII

In 1857, when Marx was working on the *Critique* and moving towards *Capital*, it seemed that another revolutionary outburst was near. He wrote to Engels on 13 November, 'In 1848 we thought our time was coming and in a certain sense it did, but this time it's really coming and everything is at stake.'[8] Under

[8] This over-optimism, with an idea that capitalism might simply collapse with inner decay, never quite went. Thus Engels wrote to Bebel (24 Oct. '294): 'According to the reports, you said that I had prophesied the collapse of bourgeois society in 1898. There is a slight error there somewhere. All I said was

this extreme pressure of urgency he wanted to hammer out in the simplest, clearest and most forcible terms what the basic political and economic issues were. The extent to which he personally felt that the work was a narrowing of his interests is shown by his exasperated comments. In April 1851 he had written to Engels, 'I am now so far that I have finished with all the drudgery of economics. After that I shall work on my book at home and pitch into some other science in the Museum. It is beginning to bore me.' Engels replied, 'I am glad that you are finally through with your political economy. The thing was really lasting too long.' But it was going to last considerably longer—right up to Marx's deathbed.

This intensely practical and polemical bent must be taken into consideration. On the one hand Marx carries on the day-to-day fight and analysis in such activities as his articles in *The New York Tribune*; on the other hand he keeps working away at the full theoretical exposition of the hopeless discord in existing society. He feels every hour of the day and night that he must battle against the veils, the distortions, the lies and hypocrisies which make up so much of that society's armour against the forces of renewal, and which had a particularly impenetrable smugness in Victorian *laisser-faire* days. He aims blow after blow against idealist distortions of the nature of social developments—distortions which conceal all the real dialectical nexus in false notions of the place of mind or spirit in the movements of history.

He is speaking out at a world which denies or evades the concrete truth of the life-process; which blandly averts its smug eyes from all that reveals the fullness of life, the unity of humanity with nature. The question he answers is the question which seeks slyly to ignore or to cut the subtle knot linking men dialectically with all other processes of nature. The essential point to bring out is the basic function of productive activity in making man man.

Marx wants primarily to affirm that there is nothing but the life-process; and that any abstractions or concepts which seek

that we might possibly come to power by 1898. If this does *not* happen, the old bourgeois society might still vegetate on for a while, so long as a shove from outside does not bring the whole ramshackle old building crashing down. A rotten old casing like this can survive its inner essential death for a few decades, if the atmosphere is undisturbed. So I should be very cautious about prophesying such a thing. Our arrival at the possibility of power, on the other hand, is a pure calculation of probability according to mathematical laws.' (Cf. the extreme over-valuation of working-class developments in U.S.A.—letter to F.K. Wischnewetsky, 3 June 1886). Such intense over-simplification reveals the weaknesses of the socio-economic isolate (see later in this ch., 8).

to cut their umbilical connection with the productive energies are denying the whole nature and movement of history—are denying the human essence. His increasingly polemical urge makes him consider his terminology almost entirely from this aspect. He wants to affirm the fact that the structure of historical movement can never be grasped unless the key-nature of production is throughout kept in mind. But, in doing so, he moves from the position of *German Ideology*, where production embraces all human activity, including the cultural forms and expressions, into the position of the *Critique*, where his angry probing into economic structures leads him to emphasise more definitely one of the basic levels involved in production.

He is not, I repeat, denying the proposition put forward in the *German Ideology*; he is simply keeping his eye firmly on those aspects of 'production' which he had found manageable—the measurable aspects which enabled him to draw up certain simplified laws of development. In using a rough formula to indicate that the other aspects have a real relationship to those which he has dissected, he is meaning no more than the affirmation that everything is within the single life-process. But because of his particular concentration of attention it has been possible to interpret his words as meaning that the economic structure can be abstracted from the total life-process and set up as a *primum mobile* for men, a basic force from which the other elements or aspects of men are derived.

Such an interpretation, however, runs counter to everything creative in Marx's thought. It is a confusion and distortion which can only be made if we crudely isolate some of his statements from the whole current of his mental activity; and if we refuse to relate those statements to their historical context.

VIII

Marx himself makes no bones about the way in which polemical emotions and directions provoke him into one type of formulation rather than another. In the Preface to the Second Edition of *Capital*, he writes:

> More than thirty years ago, when Hegelianism was still fashionable, I criticised the mystifying aspect of the Hegelian dialectic. But at the very time when I was working at the first volume of *Das Kapital*, the peevish and arrogant mediocrities who nowadays have the ear of the educated public in Germany, were fond of treating Hegel much as in Lessing's day the world of Moses Mendelssohn used to treat Spinoza, namely as a 'dead dog'. That was why I frankly proclaimed myself a disciple of that great

thinker, and even, in *Das Kapital*, toyed with the use of Hegelian terminology when discussing the theory of value. And sometimes he uses savagely ironic analogies.

True, there is nothing of ironic intent in the passages cited above in §ii, but there is much of polemic colouration; and that colouration must be borne in mind when we ask exactly what Marx means—what question he is answering. He is vindicating the essential part played by productive energies and relations in the dialectic of the life-process, and is insisting that mind or spirit cannot function in an abstract space. There is a real dialectical relation, he is saying, between the material productive level (the quantitative aspects) and the spiritual processes. Each level of process is dialectically determined by the other in the sense that together they make up the unity of the life-process. Marx has made abundantly clear in his earlier works that that is the fundamental conception from which he always starts out. He repeated it with only a slight modification of terms, when in *German Ideology* he equated the production of goods and the production of ideas as different aspects of the life-process. In the *Critique* he has no intention of taking an iota away from those previous statements, but he is concentrating on one aspect of the truth—the aspect which he feels to be most polemically important in the demolition of contemporary idealisms.[9]

We must make this differentiation with the utmost care, with the utmost attention to terms, if we are to remain true to the concept of dialectical unity. The polemical simplification, with its emphasis directed at the vast topsyturviness of 19th-century thought, enabled Marx's analysis of the inner contradictions of capitalism to get across to growing numbers of class-conscious workers. Not of course that Marx is deliberately limiting his outlook or his terms for propagandist purposes. The effective canalisation is brought about by the historical pressures, the ceaseless convergence of certain basic political issues upon Marx's dialectically thinking brain.[10]

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[9] It is noteworthy that what is perhaps Engel's finest statement of dialectics was made as a polemic against Dühring. For Marx, see also *Note*, p. 69.

[10] Note how Lenin in his fragment *On Dialectic*, emphasising the fundamental importance of the concept of dialectical unity, points to failures to keep it in mind through polemical popularising. 'This aspect of dialectics customarily received very little attention (e.g. by Plekhanov): the identity of opposites is taken as the sum-total of examples, for example "a seed," and in Engels, for example, "primitive communism". But this is in the interests of popularisation and not as a law of *Knowledge* (and as the law of the objective world).' For Plekhanov's failings in this respect, see Shirikov, 144.

IX

The dialectical position is that practice and theory are one; act in its external material sense and act in its inner spiritual sense are one. When we say 'In the Beginning was the Deed', we are polemising against the idealist notion that in the Beginning was the transcendent Word. But if we start thinking that men somehow did deeds and then began to think about them—that men somehow achieved a productive act and then began to think about it, or that the thought just accompanied the act without being an integral part of it—then we are in a hopelessly mechanist position.

Yet in variously veiled forms that abstraction of the Deed, which at once makes the Deed sub-human, is continually made by thinkers who ought to know better. Consider the mixture of profundity and confusion in the following statement:

> Material change and mental change, or in the static sense, object and mental image, are complementary forms of activity, intimately bound together by a qualitative relation. We can perhaps follow the process in this way.
>
> The objective behaviour of the world stimulates the human being; that is, it causes changes in two apparently separate human qualities, his action and his thinking. The latter, the thinking, sees the former, the action, however, as part of the objective world, infers, deduces, co-ordinates, and the cream of this experience is subsumed into a theory, in what we call a rational form. It is a rational form that is approximately the counterpart of the physical process itself, and it includes his actions . . .
>
> There can be no question of the universe ever showing itself in fundamentally irrational form. Rational thought forms itself in the process, and in so doing becomes the instrument for further discovery. What is actual can be analysed into rational form. Rationality to be valid must have its counterpart as a possible process in physical nature. In this sense are thought and action a unity, two aspects of a process that exhibits, as a single statistical isolate, an active qualitative relation to the physical world.[11]

That statement hovers on the edge of a true dialectical affirmation of the unity of process. It sees the way in which the material and the spiritual processes are actively bound up together—so that rationality is not a mere matter of judging correctly a body of automatically given sense-data, but is rather the living unity of mental processes with all other processes. Thought is a formative process like the other processes (which we call material) which it apprehends.

[11] J. Levy (a) 277f.

And yet there is a thin vein of mechanistic thinking which prevents the passage from being quite right. How can there ever be a moment where you can start off with the 'objective behaviour of the world' as something detached from the life-process of the individual? The mental-material act is always bound up with the objective behaviour of the world; but that is not the same thing. In one case, action and thinking are derived from an external stimulation; in the other case, action and thinking and stimulation are all aspects of a single process.

This may be thought hair-splitting; but if we turn from this passage, published in 1938, to a passage in another book by the same author, published in 1945, we see how the mechanistic elements have hardened.

> A human being is active. He does things, and he thinks and feels about the things he does; he then passes on to affect the things he thinks and feels about. If the situation irritates him, he tries to change it so that the irritation may pass, so that the quality of his feelings may change.
>
> We put it this way:
>
> *First stage*—The world affects his thoughts, passing into
>
> *Second stage*—The world and his thoughts arouse his feelings, passing into
>
> *Third stage*—He does something to the world, changing it.
>
> These are not separate and distinct as we have written it. As he changes the situation, he is induced thereby to think and again to feel about what he is doing.[12]

In so far as that statement makes sense, it implies that thought is somehow an after-product. Logical priority is given to 'doing things'. Out of the automatic, abstract deed or economic fact somehow arises the surrogate of thought. Such a formulation might have a crude polemical value against the position that mind is an entity or essence prior to body; but as a precise scientific formulation it ends by falling into the very one-sidedness it deplores in its opponent's case.

X

I have said that Marx could not have done otherwise than he did if he wished to find the point of most effective operation for

[12] Levy (b) 39f. The mechanist position comes right out in the diagrams on pp. 104 and 92. Cf, 'They interact as opposites in the sense that ideology and social institutions are evoked or arise from the influence of the material means of production on the people who operate them, and in their turn finally change and enhance these forms of production . . . It is the essence of the materialist view. This is one of the key-principles of Marxism', 103-4. Rather, it is one of the basic distortions of Marxism: arising from an illegitimate use of mechanist cause and effect in the human sphere.

his dialectical realisations—the point at which his intuition of the unity of the process could mate most powerfully with the motive forces of history. For from the very first his orientation was towards the need for polemising against the divisive forces in his world. His realisation of the unity of natural process, of man and nature, of individual and society, led him directly into the discovery that class-society outraged and crucified the wholeness of man. In taking the polemical steps which led to *Capital*, he was not following any wilful mood of pugnacity; he was going straight to the heart of reality, in the inescapable struggle. No other way could dialectics impact on the real world at that stage of history.

Marx was obliged to make a certain isolate in order to find his point of operation. That isolate was the process of economic production, its modes and relations. The choice of that isolate led him both to the terrific virtue of his analysis and to its necessary limitations.

In acting thus, he was taking the only procedure open to a scientist, and his act is to be analysed always in terms of the Collingwood formula: What question is he historically answering? That formula must be applied to all thinkers, all scientists and artists, if we are to understand their work with any clarity. The historical situation in its full dialectical nature (which involves the whole human situation at the time, all the economic, artistic, scientific, institutional, etc., aspects) is what lays down the lines that can be fruitfully developed. As Whyte says, discussing the mutual dependence of material and mental aspects, 'Material and economic conditions determine little unless mental processes conform, and mental processes are ineffective unless they can extend their patterns in the external world. But neither of these aspects is in general prior to the other; both are expressions of the unitary process.'[13] The thinker has to extend his patterns in the external world; and so his thinking is a dialectical fusion between himself and the external world. His problem is to find the lines along which that fusion operates most richly and powerfully. And so it is his choice of the lines of approach, the particular isolate or isolates which he makes, that shows whether he is in the midstream of human need or floundering in the shallows.

The process of thought is a process of forming isolates and of breaking them. 'We are always mentally isolating bits of bits from a universe in which each thing or group exists

[13] Whyte (a) 79.

always within a wider group.'[14] Engels puts the same point:

> In order to understand these details we must detach them from their natural or historical connections, and examine each one separately, as to its nature, its special causes and effects, etc.[15]

And Lenin adds:

> The human conception of cause and effect always somewhat simplifies the objective connection of the phenomena of nature, reflecting it only approximately, artificially isolating one or another aspect of a single world-process.[16]

XI

If we take some of the great isolates in the history of science, without which its main achievements would have been impossible, we find the choice dictated by the needs of the whole human situation at the time. Outstanding examples are the Newtonian and the Darwinian hypotheses.

Newton isolated all that in the universe which is capable of a purely quantitative analysis; and from this isolate he built up a gigantic simplification on which the vast advance of modern science has been largely dependent. But he did it at the cost of banishing all qualities from the universe. What he evoked was a mechanical ghost of reality; and yet it was the necessary step to all further advances. Not only because of the endless direct ways in which it strengthened men's adventure into the mastery of nature; but also because of the way in which, by developing various strains and breaks in its structure, it showed progressively where the contrary movements, aiming at the restoration of fullness to the substance of things, could most effectively develop and in turn build up an evolutionary scheme: where the contrary movements could in time tackle the problem of differing levels and integrations.

Thus, there was dependent on the Newtonian hypothesis, not only the obvious derivations and extensions, but the attitudes which enabled men to go far beyond it into quite new aspects of reality.

Darwin built up his great evolutionary scheme by isolating one factor, that of Natural Selection. By working out a system whereby it seemed proved that Natural Selection could bring

[14] Levy (a) 34.
[15] Engels (c) 27.
[16] Lenin (a) xi 217. There can be major isolates and minor ones. Each great hypothesis is a major isolate, within which a very considerable working-out can go on before the limitations assert themselves.

about the survival of species best adapted to grapple with environment, he cut the ground away from all metaphysical explanations of life. He gave the stimulus towards the creation of a real sense of process and of the scientific instrument for expressing process. And yet he did all this by dealing with only one-half of the situation. He took for granted Variation and all its problems. I do not mean that he merely did not investigate the problem of Variation, left to Mendel and others the discovery of genes, etc. I mean that he did not raise the fundamental issue of what variability was, and how variability and adaptation worked together as different aspects of the total evolutionary process.

Now if Newton had sat down and gone on brooding over the problems of alchemy and the phlogiston theory, and so on, he would never have made his great isolate. He might have thrown off some remarkable intuitions of what later chemistry and mathematics did in fact establish; he might have stumbled on some mystically-phrased concepts in which we could now recognise an approach to fuller intuitions of process. But he would have done nothing more. And unless someone else had provided an hypothesis such as that which he did actually provide, we should never have been in the position even to congratulate him on his glimpses of futurity. For nobody would have formulated the great unifying concepts which with all their limitations were what was needed to build the basis for the later developments.

Similarly, if Darwin had gone on brooding over the entire problem of organism and process, he might have thrown out even more intuitions of evolutionary movement than his grandfather Erasmus did: but he could not have done more. The basis for the whole modern advance would have been lacking—till somebody else (Wallace) did approximately what he did.

There are many leaps and short cuts in the story of knowledge; but there is no evading the close relation of dominant hypothesis with the whole level which humanity has reached at any given period. At every stage, certain definite limitations have to be accepted if there is to be any stable advance and expansion of thought.

I am not equating Marx's choice of the productive processes (in the limited sense) as his isolate with the choice of mechanical relations by Newton or of natural selection by Darwin.[17] I am

[17] Engels does practically equate Marx and Darwin in his funeral oration for Marx: 'As Darwin discovered the law of evolution in organic nature, so Marx discovered the law of evolution in human history.'

however pointing to the fact that every great isolate or hypothesis in the history of thought is in fact an isolate and has its history. And what stands out on a grand scale in these tremendous thinkers can be traced in a lesser way in every significant scientific discovery. Marx says somewhere that men only tackle the problem for which they are ready; and in a broad way that is a statement we must never forget. In the actual movement of culture a myriad potentialities emerge. But only those go into fruitful action which are in the key of the general lines of advance; which coincide with the dominant needs of the human process at that point of time and space. Others may die out, may be crushed in their birth; others again may survive to link up with history at some future stage. In the case of Marx the line he took in *Capital* was the line most capable of fruitful working-out at that time and place; but other potential aspects of his thought, which he threw up but did not work out in the Forties, now provide the key to the world-process.

XII

All scientific thought, whether it deals with a huge hypothesis or a small experiment, moves by the construction of isolates and then by the breaking of them down. 'We have to remember that in stating the law there are, in addition to its mere statement, also the circumstances defining the limits of the phase to which it can apply.'[16]

The limit appears fairly quickly in dealing with a small isolate, where the potentialities of analysis are soon exhausted. But in the case of a vast isolate such as that of the measurable aspects of the universe, there is so much to be done that it is some time before it becomes at all clear that the measuring activity does not exhaust all the basic aspects of things.

Marx carried out successfully the first phase in the development of a dialectical apprehension of the life-process, with the aid of Engels. He did it in the only way that was historically possible, or historically fruitful. But for us now the important thing to realise is that, after we have fully grasped all the valuable aspects of the working-out by Marx and Engels, we have no right to rest on the generalisations of that working-out. We have to realise them as a whole as well as in detail, and then move on to the next phase. This does not mean a denial of the first phase, but means an absorption of all its positive achievements into the basis for the next arc of movement. And

[16] H. Levy (a) 106.

in fact, in the work of Lenin and Stalin, we find more than a few hints as to the way in which that arc develops; we find the new orientation rapidly and powerfully maturing. But only now, with the political experience of the anti-fascist struggle and with the enormous scientific advances since 1900, is it possible to move fully into the new phase. And now, since it is possible, it is also urgently necessary.

XIII

It may be asked: Why, if all that is correct, did not Marx say what you have said? Why did he not say that he was deliberately limiting himself to one half of the human process, and that in order to found the science of dialectics he had temporarily to ignore the spiritual or cultural side of human evolution?

The answer to that query is in two parts. First, Marx and Engels to a considerable extent did say all that. Each man was deeply interested in cultural matters. Marx, for instance, never gave up his loving study of the Greek poets. Lafargue says that he read Aeschylus through in the Greek at least once a year.[19] Such great writers as Homer, Dante, Shakespeare, Cervantes and Goethe were continual sources of spiritual strength for him; and his comments on Greek art, cited above in Ch. 1 §vii, show how acutely aware he was of all those aspects of cultural activity which cannot be explained in sociological terms. In his deep affection for Heine one may read something of a symbol of his attitude to the poetry which he so passionately loved but which he had to set aside to such a considerable extent:

> He was in close touch with Heinrich Heine and he did much to make the year 1844 a memorable one in the life of the poet, assisting at the birth of the *Winter Fables*, the *Song of the Weavers* and the immortal satires on the German despots. They were not long together, but Marx remained loyal to Heine even when the howling of the Philistines against him became still more furious than it had been against Herwegh, and he generously remained silent when the bedridden Heine cited him untruthfully as a witness that the annual grant the poet received from the Guizot Ministry

[19] Lafargue in 1891. Talk was mainly of art and literature, and the subject of politics was forbidden. Marx with prodigious memory declaimed long passages from the *Divine Comedy*, 'which he knew almost by heart; he recited also scenes from Shakespeare, seconded often by his wife . . . ' Lafargue says that he had a cult of Shakespeare, and his daughters new him by heart'. They also recited poems and satires by Burns, and sang negro songs while dancing (says Liebknecht). Marx promised them to write a drama on the Gracchi, but never had time. (He also wanted to write a Logic and a History of Philosophy. 'He would have needed to live a hundred years to carry out his literary projects . . .' Lafargue.)

was irreproachable. As we know, in his youth Marx himself had vainly yearned for poetic laurels and all his life he retained a lively sympathy for poets, invariably showing great toleration towards their little weaknesses . .

He was never misled by the shout about Heine's alleged treachery, which even affected Engels and Lassalle, though both had the excuse of extreme youth.[20] 'We need very few signs to understand one another', wrote Heine on one occasion to excuse his 'confused scribble', and the sentence had a deeper significance than the immediate one which prompted it.[21]

'We need very few signs to understand one another.' Heine touched there the quick of the man; and indeed the circumstances of Marx's devoted toil meant that he had to stay satisfied with confused scribble of contact. As we saw above, he groaned under the burden of political economy—but he bore it.

It was only after Marx's death, when a few correspondents raised a number of cultural matters, that Engels turned to face the problems at all directly. Thus, in July 1893, he wrote to Mehring:

> Marx and I are both to blame upon one point. We both placed, and had to place, the chief weight upon the *derivation* of the political, legal, and other ideological notions, with their resulting actions, from economic facts. Consequently, we neglected the elements of their form (i.e. the actual manner in which they developed) . . . Because we have denied that the different ideological spheres have an independent historical development, we were supposed to have denied that they had any historical efficacy. At the basis of this is the undialectical vulgar neglect of reciprocity. Once an historical factor has been brought into the world it can react upon its own conditions.

That goes a long way towards stating the limitations which he and Marx had 'had to place' upon themselves. It shows that Engels, when sharply pulled up, could detach himself from the polemical and practical pressures which had caused the great first isolate of Marxism. But it was not to be expected that in a short statement made in a letter he could work out fully the

[20] Mehring, 78f. I feel there is something equally symbolic in the charming story that Lunacharski tells of Lenin. In 1906 Lenin was at the lodgings of Liachtchenko, who had a library of the works of artists edited by Knackfuss. Lenin stayed for the night. Next morning he was found looking drawn and haggard. Asked if the bed had been uncomfortable or full of bugs, he answered, 'What an entrancing domain is the history of art. How much work here for a communist: what a pity that one can't do it all. If I only had more time, I'd like to study in a much deeper way this side of the social life of men.' No suggestion there that a simple one-track approach would solve the issues. (Cf. Lenin's remark on Beethoven's *Appassionata*: 'It is astonishing super-human music. I think always with a perhaps naïve pride: see what miracles men can accomplish!' —Gorky (a) 249 Lenin said he didn't dare listen to too much music.)

terms of the next phase—terms which are only now becoming possible of formulation after the new basic advances made by science since 1900. His extreme elasticity of mind is shown by the degree to which he can move into a new detachment, admit that in the economic isolate 'the actual forms of development' in culture have been ignored, and go on to point out the problem of dialectical reciprocity which had to be unravelled if Marxism was to progress. The burden of the old isolate still appears, however, in the use of the term 'derivation'.[21] In point of dialectical fact the cultural elements of a society are not derived from the economic system any more than the economic system is derived from them. They arise together with that system as part of the total human process.

Again and again in these late letters Engels returns to the theme that Marxists must beware of vulgarisations which seek to reduce the human life-process to economic necessity:

> It is not true that the economic situation is the sole active cause and everything else only a passive effect . . . though there is a fundamental necessity which in the last instance always asserts itself . . . like a red thread through all the others.
>
> According to the materialist conception of history the determining element in history is ultimately the production and reproduction in real life. More than this neither Marx nor I have ever asserted. If therefore somebody twists this into the statement that the economic element is the only determining one, he transforms it into a meaningless abstract and absurd phrase.

What is the key-point that Engels is making? That spiritual or cultural activity is real, is in no way a passive reflection or epiphenomenon; and that there is a real relation between the cultural levels and the (economically) productive levels. With these points no dialectician can carp. And again when he says that law like the money-market 'must submit to the move-

[21] The idea of 'derivation' is easier to sustain if one thinks in terms of the relation of such forms as Law to the economic structure; for there is often a close practical connection. Note that the generalisations about culture cited above from the *Critique* come after the mention of investigations which 'led to the conclusions that legal relations as well as forms of State could not be understood from themselves, nor from the so-called general development of the human mind, but, on the contrary are rooted in the material conditions of life'. *And there is no mention of Art or Science in either passage*!

Marx had perforce studied Jurisprudence at Berlin University under E. Gans, who was philosophically trained and highly polemical against the Prussian 'historical school' and 'its narrowness and mustiness and its deleterious influence on legislation and the development of law', Mehring (a) 10. Marx at the University tried to found a philosophy of law and did a lot of work before he realised the 'falsity of the whole thing.' He also made a long study of the Hegelian theory of law.

ment of production as a whole', we can have no quarrel—if production' is taken in the broad sense of the passage from *German Ideology* where Marx speaks of the production of both ideas and goods, and declares that the two forms of production are only different aspects of a single life-process.

What Engels is wrestling with is essentially the problem of finding certain terms of reference and definition adequate to the full movement of his thought. He cannot quite get across his meaning because those terms are not yet to hand That is, the dialectical working out of the real relationship he is discussing had yet to be made.

XIV

Before I pass on, I should like to return for a moment to an essay of Marx's I have already cited (in Ch. 1 § vii). This essay, referred to in the *Critique*, was only published in 1903 by Kautsky. Here indeed we find that Marx, on the eve of dedicating all his energies to the economic working-out is rapidly glancing over the whole problem and indicating the lines on which the dialectical understanding of culture must proceed. He insists strongly that there is no mechanical relation between the material base and the spiritual achievement. . .

> For art, one knows that some periods of flowering are not in any way in relation to the general development of society, or, in consequence, with the material base, the skeleton in some sort of its organisation. For example, the Greeks compared with the moderns, or with Shakespeare.[22]

He goes on to deal with the relation 'of the total domain of art with the general development of society', and to argue briefly that the contradictions can be resolved within a fuller dialectical understanding. But then, after bringing social and aesthetic together again, he posits the very further problem, the basic one, that after having established, say, the connection of Greek art and Greek society, we still have to explain why Greek art remains aesthetically vital. In short, we have still to deal with the fundamental aesthetic issue and to discover what is humanly integrative in the aesthetic act.[23]

In this essay we perhaps find the turning-point in Marx's development. After indicating the lines along which a dialectical examination of culture would have to proceed, he turned aside to devote himself to the isolate of the economic structure.

[22] Marx (f) 246-8.

[23] i.e., to bring together the Marx who wrote 'Man produces according to the laws of Beauty' and the Marx who showed that (in commodity-production) men produce according to the laws of value and surplus-value.

XV

Now, to come to the second reason why the attention on the primary isolate turned Marx and Engels from working out the terms of the fuller dialectical reference.

We must remember always that a thinker, in making one of the grand isolates which give men the basis for a comprehensive advance, must concentrate on exhausting its possibilities, and that he can do so only if he resolutely limits himself to the terms of his inquiry.

If Newton had kept on telling himself that his mathematical work was useless without an understanding of the forms and modes of evolutionary process, he would simply have paralysed his mind. If Darwin had kept on pointing out to himself that Natural Selection after all omitted the main problem of evolutionary process, he would merely have confused his thoughts and would never have written his epochal work. If one then asks why Marx could not proceed fully along the unitary lines which dominate his thought up to the *Contribution* discussed in the last section, one is simply confessing ignorance as to the ways in which human knowledge has been gained and consolidated. Creative thinking, however revolutionary, builds itself up out of the body of thought of its period; it transforms that thought, but only by reason of its close interpenetration. There is no such thing as a given instrument of thought with self-sufficient criteria. 'Rational thought forms itself in the process', says Levy profoundly, 'and in doing so becomes the instrument for further discovery.'

Marx 'formed' a dialectical instrument by grappling with the bases of scientific knowledge in his day in terms of the only isolate capable then of extended and precise investigation. This instrument was inevitably a combination of relative and absolute elements (using both terms in reference to human process); on the one hand it was bound up with the limitations of the scientific knowledge of the period, on the other hand it grasped certain aspects of the unity of process which remain 'eternally' true.

XVI

From the remarks made in the last section we can develop a more exact explanation of Marx's isolate, its validity and its limitations. The old forms of static logic could set themselves up as infallible and unchanging, since they are conceptually based,

like the Newtonian hypothesis, on identities and differences which can be quantitatively verified. But dialectical logic can never have such comfortable assumptions. It is as far removed from an opportunist relativism as it is from static certitudes; but it is never separable from the whole body of knowledge and realisation at any given moment. It is the abstraction of that body, but can never rest content with abstraction. It is process-logic and must continually return to process to verify itself. It is formed in the act of discovering itself; and since the act of discovery is a movement into a fuller concept of unity, the logic can never be quite the same at the end of any section of its adventure as it was at the beginning.

Dialectical logic is formed, extended, modified, and rendered more adequate by the actual process of its working-out. It is not a method in the abstract, but is the consciousness of the totality of scientific and artistic method (which together include technique) at any given moment; and so it must move from one unifying depth to another. It is dependent on science in its total movement, and changes as the grasp of science changes and deepens. (It is also in the last degree equally dependent on art-activity).

When one considers the shattering scientific discoveries which have gone on since 1900, it is obvious that forms of dialectical method worked out in the period 1845-80 could no longer be adequate but must need reconsideration both in detail and in fundamental concept and method. To think otherwise is to put oneself automatically out of court by a confession of ignorance as to the whole nature of dialectics. The appeal must be from the Marxism of the bibliolaters, of whom Trotsky may be taken as an example, to what Stalin has called 'creative Marxism'. And Lenin and Stalin, we find, have in fact, done much to help the shift to the fuller concept of dialectical unity. In the directly political sphere they have almost always kept that concept before them. To take one outstanding example, Stalin's analysis of Nationhood is concerned with the unifying factors in social life and arrives at the following definition:

> A nation is a historically evolved, stable community of language, territory, economic life, and psychological make-up manifested in a community of culture.[21]

[21] Stalin (a) 8. His whole analysis should be studied. All the divisions are divisions within a unity, which is perpetually reaffirmed. All the complex antagonisms, conflicts and opportunities, which make up a large part of the stream of events, are seen as in the last resort constituting a living unity, the nation, which in

Only after having cleared up the elements constituting national unity does Stalin go on to discuss forces which split or modify that unity. His method throughout is consciously unitary.

But Lenin and Stalin have been great political leaders who had no time to spare for tackling the full cultural issues.

XVII

In considering any application of dialectical logic we must then look to the total state of science in its period. The dialectical instrument of Marx and Engels must in the last resort be related to the forms and methods of science in the period 1800-80. Later, in discussing Hegelian logic, I shall go further into this point. For the moment it is enough to make it in a general way. But meanwhile I trust it will be clear that a critique of Marx along the lines I have taken is in no way a statement that Marxism is or has ever been mechanical. The problem is, and always will be, to keep on examining the dialectic for mechanical elements—to bring it closer to the full development going on in science. This involves correction of detail, but also of theory. Theory cannot exist apart from practice, or vice versa. The two are merely different aspects of a single process of knowledge.

XVIII

There is yet one more factor that should be glanced at in our inquiry into the reasons for Marx's isolate. This lies in the historical and political situation itself. Marx emerged from the abortive 1848 revolutions to meet the breakdown of Chartism and the difficult period when the British working-class were striving to find new forms of union—to develop trade-unions and co-operatives (and ultimately the Labour Party) inside the triumphant upcurve of imperialist expansion.

The need to *separate things out* was predominant—to stress conflict in a situation where (whatever disturbing factors might come and go) there was no force capable of breaking through the class-divisions. Only now, with the enormous

turn is a factor in larger fields of unity (Ibid. 17). Stalin explicitly rejects one-sided approaches. 'It is therefore clear that there is in fact no single distinguishing characteristic of a nation. There is only a sum total of characteristics, of which, when nations are compared, one characteristic (national character), or another (language), or a third (territory, economic conditions), stand out in sharper relief. A nation constitutes the unity of all these characteristics taken together' (11). 'The economic, political, and cultural conditions of a given nation constitute the only key to the question of *how* a particular nation ought to arrange its life and *what forms* its future constitution ought to take. It is possible that a specific solution of this problem will be required for each nation.' Throughout, Stalin implies the Unitary Methodology.

advance of science and the massing of the peoples for the achievement of full democracy, can we afford to put the emphasis on the uniting factors. Conflicts enough remain, on a ghastly and bloody scale of possible destructiveness which even Marx could not have dreamed of; and yet the emphasis on those uniting factors remains. It in fact alone can save the situation.

XIX

And now a last word, which I write on re-reading this chapter some months after its composition. I feel that none of the analyses I have made are entirely satisfactory, but I feel that as they stand they open up lines of thought in the necessary direction. Above all, I feel that despite many efforts to protect my thought from misunderstanding, the reader may have the impression that I am saying something like this: that Marx got the idea of dialectical unity, applied it narrowly along one line, and thus left a mass of distortions. What I am in fact saying is something very different.

The key-point is that Marx developed his dialectical concept in terms of the *full human situation* in which he found himself. Those tensions which can easily be labelled as narrowing are in fact the particular muscular and spiritual lines of strain as Marx braces his being for the gigantic struggle against all that was humanly evil in his world. If I speak strongly of mechanistic perversions of his thought, it is because such perversions fail to grasp this central fact. Once one has grasped it, one's loyalty to Marx can never be shaken; and one must fight against all and any who deny or fail to see it. In the last resort the polemical aspects of his thought are sucked into that intense core of creative light, that ceaseless realisation of living unity, which determines all his formulations.[25] And because Marx is always thus at the heart of human life, the shape of his thinking is bound up with the shape of his world. Not in any superficial way, but in the sense that his image of the life to be redeemed is vitally fused with his image of the evil force which distorts life and obstructs its freedom. All that I have said above about the 'relativities' in his thought must be understood inside this focus, which gives the last word to his vision of wholeness.

[25] In general formulations, where he may seem to be putting a gap between production and 'superstructure', we must allow for the effect of his strong sense of *the very real gap*, brought to a head by capitalism, between action and thought, between productive realities and theoretical workings-out. In this way the change in the *Critique* probably represents his deepened sense of the wrong done to life by capitalist ideology. What he wants above all is a new way of life in which the alienating gap between production and culture is no longer existent.

CHAPTER THREE

Consciousness

I

TOWARDS THE END of the last chapter we touched on the problem of knowledge. We noted that the instrument of knowledge cannot be some colourless and abstract instrument, implying an absolute and abstract criterion of values. Rather, it is a structure fashioned in the very process of knowing, and changes with the changing range and depth of knowledge.

As a first consequence of the dialectical approach, we must take as our basic starting-point the unity of man's spiritual processes with the processes of nature. Men do not know the world because they have a given faculty of judgment, which has enabled them to judge correctly, to compare evidence, and so on. Men know the world because they are part of it. The faculty of judgment and all the rest of the human psychic equipment have evolved through a differentiation within the human organism. The point of reference is always the human whole, from which alone the separate faculties derive meaning and power.

Thus Engels criticises the rationalist or idealist attitude to knowledge:

> Such a result comes from accepting in quite a naturalistic way 'consciousness', 'thought', as something given, something from the outset in contrast to being, to Nature. If this were so, it must seem extremely remarkable that consciousness and Nature should be so closely in correspondence.
>
> But if the further question is raised: What then are thought and consciousness, and whence come they, it becomes apparent that they are products of the human brain and that man himself is a product of Nature, which has been developed in and along with its environment; whence it is self-evident that the products of the human brain, being in the last analysis also products of Nature, do not contradict the rest of Nature, but are in correspondence with it.[1]

Later, near the end of his life, he wrote:

> The general laws of motion—both of the external world and of human thought—(are) two sets of laws which are identical in substance but differ

[1] Engels (a) 44f.

in their expression in so far as the human mind can apply them consciously, while in nature and also up to now for the most part in human history, these laws assert themselves in the form of external necessity in the midst of an endless series of seeming accidents.[2]

With these positions Lenin concurs.[3]

II

These statements are based on the unitary conception in which both the external processes of nature and the internal processes of the spirit work by the same principles, and are ultimately parts of a larger single process. In the act of knowledge they make up a living unity, in which consciousness and unconsciousness are fused.

This apprehension is an act. That is, it is actively unifying, creative. Into it both nature and the apprehending individual enter; and though subjective elements are present, the total result is neither solipsistically subjective nor abstractly objective. It is a real knowledge of a real world.

But because personality is inseparable from social existence, the story of knowledge is not a simple one of men apprehending the world and themselves in a steady one-track movement towards truth. The process by which a man apprehends the world is bound up in turn with all the struggling divisions and unions which make up his personal and social life, and vice versa. The expansion of knowledge is bound up with the expansion of freedom and universality (in Marx's sense of those terms). And in history freedom and universality have been limited, thwarted, distorted as well as realised; and this complex movement and counter-movement appear in knowledge as well as in personal and social life.

The full psychic issue does not concern us here but we must inquire further into the terms used to express the relation of spirit to the outer world and the processes of knowledge. If knowledge is an active process, it must do more than reflect the world. It apprehends the world; and since the apprehension is part of man's whole active relation to society and nature, it changes the world. It does not reflect the self, it expresses the self, and by expression it changes the self.

The processes of knowledge are thus an integral part of the whole human life-process—of productive activity in the broad sense which includes sexuality and culture.

[2]Engels (a) 54f.
[3]Lenin (a) xi, 217f.

III

However, the concentration on the socio-economic isolate, which we discussed in Chapter 2, prevented sufficient attention being paid by Marx, Engels or Lenin to the terms needed to define the relation of knowing to the whole psychic process. The reason for this is bound up with the polemical attitudes already discussed. Not that Marx, Engels or Lenin ever really fail to think of mind in the terms cited above in §i. They merely proceeded to apply the dialectical generalisation in a polemic context; they were primarily concerned with attacking idealist preconceptions.

> The recognition of objective law in nature and the recognition that this law is reflected with approximate fidelity in the mind of man is materialism.[4]

So Lenin. And if one takes that passage in isolation, it could be argued that mental processes were being described as passive and automatic reflections of movements outside the self. *Reflection* is a term which no amount of casuistry can reconcile with the idea of active processes. But read the preceding sentences:

> For it is indeed clear that the subjectivist line on the question of causality, the deduction of the order and necessity of nature not from the external objective world, but from consciousness, reason, logic, not only opposes the former to the latter, but makes nature a part of reason, instead of regarding reason as part of nature. The subjectivist line in the question of causality is philosophical idealism (varieties of which are the theories of causality of Hume and Kant) i.e. fideism more or less weakened and diluted.

It is clear then (once we invoke the Collingwood formula) that in using the term *reflection* Lenin is merely intending to affirm that the external world really exists and that there is a real relationship between it and the knowing self. He is only affirming that knowledge of the world is possible.[5]

He is in fact conducting his long polemic against the attempt to find in knowledge only a set of 'corresponding symbols', against Plekhanov's thesis of 'hieroglyphs' and other slightly-

[4] Lenin (a) xi, 216.

[5] The extent to which this is his intention, and the minimal extent to which he dogmatises about his formulations, can be seen from the following: 'The scientific doctrine of the structure of substance, the chemical composition of food, and the electron may become antiquated with time; but the truth that man is unable to subsist on thoughts and beget children by platonic love alone can never become antiquated.' (a) vi, 152.

disguised idealisms which sought to cut the dialectical link between mind and nature.[6]

IV

Though he uses the term *reflection* when he has this polemical purpose uppermost in his thoughts, he continually makes clear in other passages, when he comes to deal positively with the problem of knowledge, that he conceives the mind as fundamentally active. For instance, he then uses the active dialectical term *transformation*:

> The development of consciousness in each individual and the development of the collective knowledge of humanity at large presents us at every step with examples of the transformation of the unknown thing-in-itself into the known thing-for-us, of the transformation of the blind unknown necessity, necessity-in-itself, into the known necessity-for-us. Epistemologically, there is no difference whatever between these two transformations.[7]

And at one point we actually catch him passing from the polemical anti-idealist term *reflection* to the positive dialectical phrase *creation*. In activity, he says, 'the consciousness of men not only reflects the objective world, but also creates it.'[8]

And in yet another passage he develops the idea of thinking as a process of transformations in order to attack the sham-Marxist:

> Dialectics is characteristic of all human knowledge in general. And natural science shows us (and here again it must be demonstrated in any *given* simple instance) objective nature with the same qualities the transformation of the singular into the general, of the contingent into the necessary, transitions, modulations, and the reciprocal connection of opposites. Dialectics is the theory of knowledge of (Hegel and) Marxism. This is the 'side' of the matter (it is not a side, but the essence of the matter) to which Plekhanov, not to speak of other Marxists, paid no attention.[9]

Here he claims that transformations are characteristic of mental process as of any other process.

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[6] Just as Engels developed much of his thought in the polemic against Dühring, so Lenin in *Materialism and Empirio-Criticism* was throughout aiming at the confused attempt by a group of Russian socialists exiled on Capri to recast Marxism on positivist lines. His terminology is therefore based primarily on the need to establish the reality of the external world, and must be critically understood in this light.

[7] Lenin (a) xi. 249.

[8] See Shirikov, 269.

[9] Lenin, (a) xi. 83f.

V

But there is no doubt that the polemical use of the term *reflection* has long outlasted any virtues it may once have had. It tends to obscure that 'essence of the matter', the dialectical unity and movement of transformations in process. It is no use at all to say:

> Even the smallest generalisation or mental conclusion is a certain activity of the subject. The *movement* of knowledge in the direction of ever deeper connections supposes an active, operative relationship of the mind to its object.
>
> By defining representations, ideas, as mirror-like reflections of the object in consciousness, the Marxist-Leninist theory of knowledge is only seeking to stress the material nature of the object and the reflection of its real aspects in representations. But from this mirror-like element in reflection, it by no means follows that human consciousness, like a lifeless reflecting surface, mirrors only that which immediately stands in front of it, nor that our consciousness, like a material mirror, always and in some way reflects objects according to some immutable laws of its own, and consequently gives, at any given point, either absolute truth or absolute falsehood.
>
> By drawing such conclusions from the theory of reflection, opponents of the Marxist-Leninist philosophy such as Max Adler, have either deliberately or inadvertently distorted it; like Axelrod they 'forget' that this 'reflecting' knowledge is an active moment of historical, evolutionary social practice.[10]

All that is true enough as an historical explanation of how the term came to be used by Marxists, but it is futile as a defence of the continued use of the term. Why on earth persist in using a term which confessedly gives a maximum chance for the distortion of Marxism? In fact, its continued use is opposed to the development of a more fully adequate Marxist theory of knowledge and of psychic process in general.[11]

The double orientation which is shown by the use of a passive term in a polemical use to vindicate an active relation is exactly paralleled by the double use made of the term *production*

[10] Shirikov, 217. The extent to which *reflection* was not intended as a passive term is shown by Engel's statement, 'Dialectical philosophy is nothing more than a mere reflection of the forces of the thinking brain' (Engels (a) 22).

Lenin's purely polemical attitude in *Empirio-Criticism* is shown by the fact that he is not interested to assess the positive contributions of Mach, who helped to formulate the bases of gestalt (Mach, (a)) and by his relational concepts of space and time leads on to Einstein (Mach. (b)).

[11] The polemical angle of the term *Reflection* can be seen further in Marx's formulation in the Preface to the second chapter of the first volume of *Capital*.

(discussed in Chapter 2) to mean the total life-process and also economic activity in the restricted sense.

It would be a libel to pick out the passages from Marx and Engels where the polemical purpose allows of a mechanistic interpretation, and then to assert that these passages express the whole of Marxism and that therefore Marxism is a mechanistic philosophy, rent by unrealised dualisms. That in fact is what most of the critics of Marxism have done. The truth is that throughout the development of Marxism a vital sense of the unitary nature of process has been the central driving-force. But the movement has gone on (as Engels emphatically pointed out) almost entirely inside the isolate of economic activity. Consequently, the limitation, necessary as it was for the foundation of dialectics, has introduced certain blind spots and permitted the introduction of passive or dualistic formulations at the very points where a polemical effort is being made to assert the unity of process.

The polemical purposes—the historical pressures which made the primary isolate necessary—are now ended. Our problem is to analyse anew all the important documents of Marxism to release the omnipresent insistence on dialectical unity into new and more comprehensive applications, into more effective terms.[12]

Claude Cahen thus states the task of the Marxist today:

> But above all, man thinks. Well, his thought is not separated from the material conditions of his life: direct bond in some respects with technique, but far more, since we must fundamentally consider social man, bond with the social structure. A new task, and none the less difficult, is then proposed to us: taking as directing hypothesis of work the existence of relations between thought and social structure, to make precise its modalities and content. For one has said nothing when one affirms that such a thought 'reflects' such a structure or social position.[13]

The only way to meet this new task is to consider thought as one aspect of the unitary life-process of men and then to examine its integrative movements. Part of the problem is then to develop a theory unifying nervous and cerebral process with spiritual process.

[12] The development of psycho-somatic theory, with related clinical applications, has gone on rapidly in the Soviet Union since 1940, partly through the attention paid to closed head-injuries during the war; and there are already emerging important generalisations as to the relations of mind and body, differentiation of traumatic and somatogenic psychoses, etc. See A. S. Shmaryan in *Anglo-Soviet Journal*, IX, ii (1948). Experiments have shown how anxiety produces sarcoma and cancerous conditions, which hypnosis, removing the provoked anxieties, can remove.

[13] Cahen, 47.

VI

Much valuable work has recently been carried out, which enables us to get a clearer idea of the physical processes accompanying consciousness. The primary function of the nervous system is conduction, the transmission of impulses; and we know how messages of an electrical nature are sent along the sensory and motor nerve-fibres. The old attitudes which sought to visualise such a movement in mechanistic terms, using some such analogy as that of a telegraphic system, are being supplanted; and we begin to see the process at every step as an integrative activity.[14] Groups of cells within the central nervous system are seen, not as mere passive agents of conduction, but as rhythmically active systems:

> It is naturally much more difficult to talk about such a system, in which there is a background of continual activity, than of one which can be conceived as returning periodically to rest. Indeed, it is one of the chief difficulties of biology that the organism is a going concern, and that life can only be properly conceived as an activity, but our modes of thinking make it easier for us to ascribe the essential features of life to the properties of a substance, 'protoplasm', than to an activity. In studying the nervous system, like any other part of the body, we have to try to trace out the sources and patterns of this activity which constitutes life; to find out what makes the system go . . .

Young goes on to say that if the springs of behaviour came in the main from changes around the organism, then the animal would be a marionette pulled by the environing changes. But, especially in the higher organisms, the initiative comes from within.

> There has been sporadic discussion of the nature of this inner 'drive' to behaviour, but, considering its importance, relatively little emphasis has been placed upon it. Perhaps this is so because many scientific minds, familiar with the classical concept of causation, find it easier to think about a system actuated from without than from within. In the past most

[14] This unitary approach links with the suggestion of Wigglesworth that 'the organism is a giant molecule . . . On this view the difference in organisation of unicellular and multicellular animals disappears. The latter, presumably for reasons of size, are subdivided into cellular units. Interest in these units, as Heidenhain pointed out has distracted attention from the organism which they subserve . . . The cells do not "co-operate to mould the body form"; they merely carry and care for a small segment of the continuum which is the organism and of which they are the servants.' The movements and secretions producing growth and metamorphosis occur in and through the cell, but cannot be isolated in a cell-unit, 87-9.

of the systems dealt with by physical techniques could be considered as initially at rest and then activated from outside. Modern physics have surmounted the limitations of such concepts, and biology could never be bound by them, for a living organism is not fully at rest until it is dead.[15]

There are systems in the body which are rhythmic and never come to rest. The outstanding example is the breathing system.[16] Recently it has been possible to record the electrical effects in the brain. Various sections of the cerebral cortex, each made up of many millions of cells, give out rhythmical electrical discharges which involve the simultaneous electrical activity of many of these cells. A possible explanation is that the mind 'consists of the resonance-energy of these discharges of living cells. If so, the mind would be an aspect of the unity of the body, as, for example, Aristotle and St Thomas Aquinas believed.'[17]

And just as molecules possess an energy-structure which is not due to any of their individual parts, so does the organism as a whole.[18]

Along such lines as these we may expect the full growth of a unitary concept of mind and body. But we have yet far to go before we can relate the nervous and organic movements to the whole formative process of individuality, which includes the building of ideas and art-forms, techniques and mathematics.

That relation will be the work of a fully dialectical psychology. For the purposes of this chapter it is enough to have pointed out that the biologists who deal with the central nervous system are themselves moving towards positions which need the unitary dialectical approach for their clarification. And this is a problem in which the term *reflection* can play only an obfuscatory part.

In fact, the final blow cracking this mirror-analogy and insisting with all possible force on the active function of mind, comes from Lenin himself!

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[15] J. Z. Young, 54ff.

[16] The whole organism is a rhythmic system of this sort—so is each cell. 'The spheroidal shape . . . is in a relatively stable equilibrium or a symmetry creates an elongation round some point' Then we get contraction and expansion round a configuration of equilibrium, Rashevsky (c) 47.

[17] J. B. S. Haldane (b), Essay on Psychology.

[18] 'The anatomical substratum of conscious activity is to be sought rather in some system of interconnections through which the sensory data derived from external stimuli are brought into functional relation with those activities of the brain associated with the recognition of the individual self. We can only surmise what the nature of those activities may be, but it has been supposed that the "sensation of personality" is ultimately determined by the integrated sum of all those vague impressions resulting from the impulses which are constantly streaming into the brain from the body itself—from viscera, muscles, joints, and so forth', W. E. Le Gros Clark (a) 72 ff. But that leaves the problem of integration still in the air.

The approach of the mind (of man) to a particular thing, the taking of a cast of it (in other words, an impression) is not a simple direct act; a lifeless mirror-reflection, but a complex, twofold and zigzag act, which harbours the possibility that the phantasy may entirely fly away from reality; what is more, it harbours the possibility that the abstract conception, the idea, may be transformed (imperfectly and unwittingly on the part of man) into phantasy (and in the long run, into God). For even the simplest generalisation, and the most elementary general idea is a fragment of phantasy.[19]

VII

Whyte thus poses the general problem of formulating a fully dialectical concept of mind-process and its relation to the processes of nature:

The human system contains a special organ, the brain, which facilitates the development of organic process to a greater degree than any other organ or structure in the whole of organic nature. In the case of man the organic process-forms in question are all the forms of human life, the entire system of behaviour and communication which make up the social tradition.

The human brain facilitates the development of the forms of human life, firstly, by separating them out and clarifying them in the symbolic forms of thought (which, however, being organic can never be wholly isolated from the matrix); secondly, by preserving them more efficiently through an improved faculty of memory; and thirdly, by extending them further, both in more comprehensive delayed responses to the environment and through their symbolic communication to others.

Facilitation consists in the furthering of the development and extension of forms, and facilitation of the proper forms of human life implies the heightening of the dominance of man over his environment. Man dominates nature because his brain is the most powerful facilitating structure yet developed.[20]

Throughout this book I shall have something to say from time to time of this facilitating power of the brain, this organic basis of all spiritual activity. Whether a poem or a new productive technique results, the principle is the same. Tension of inner and outer, variously resolved, occurs in all spiritual process; but it is at its most active level, its most powerful facilitation, in creative expression. Then an organic fusion of subjective symbolisation and objective effectiveness is most richly achieved.

[19] Lenin, 'On Dialectics' (a) xi.
[20] Whyte (a) 54.

VIII

But, although I do not wish to discuss yet the full psychological problem, it would be as well to make a brief statement here of certain aspects of the Gestalt theory. For that theory raises clearly the whole question of the function of the central nervous system. The Gestalt school seek to escape the dilemmas of Idealism and Pragmatism, of Vitalism and Mechanism, of Parallelism and Interaction in psychological theory. They introduce the idea of dynamic form or pattern as the link between physical and mental events; and the idea of field to break through the old abstractions. The psychological act occurs in a single field which includes the geographical environment (or stimulus pattern), the organism, and the behavioural environment. The latter, which acts 'as a mediating link', includes social and cultural elements.[21]

The theory is mainly worked out in the analysis of the process of cognition. It squarely attacks the mechanist effort to explain the complexity of behaviour as the culmination of a crowd of separate processes with emphasis on the locus of an excitation.[22] It then attacks the mechanist (idealist) notion that there is some basic difference or crevasse between neural and mental process, e.g.

> Thought and feeling must be recognised, on any view, as fundamentally different from any material process, and the motion of the atoms and molecules of the brain as fundamentally different from the thoughts and feelings. (Stout, *Manual of Psychology.*)

And Wundt insisted that the sensation blue and the corresponding neural event had absolutely nothing in common. To this attitude Gestalt replies that the opposition of molecular and mental activity as two totally different levels is false; for quantitative aspects are also always quantitative, and in physics there is never a merely molecular action—there is always in a changing molecular relationship a transformation of dynamic patterns. Gestalt therefore relates the full neural and organic pattern to the spiritual pattern, and calls them *isomorphic.*[23] Molecular events cease to be thought of as independent events, the irreducible basis; the true basis appears as local

[21] Koffka (a) 34.

[22] J. von Kries refuted the atomistic attitude in 1900, and Lashley demolished it at length again in 1929. For the Gestalt refutation of Berkeley's (idealist) point-to-point interpretation of experience, see Koffka (a) 155ff.

[23] Wertheimer. Anticipations of the isomorphic theory can be found in Mach and G. E. Muller among others.

events determined by large field-events.[24] The problem of the unity-and-difference of object and subject is replaced by the problem of the relation of local events within a unified process, the full field. And the old subjectivist statement that we know only our own stimuli, or our own neural processes, is seen as a wilful selection of one small aspect of the total situation. The unity of our mental processes is a proof of the real existence of the outer world:

> The stimuli as a pure mosaic possess neither this integration nor this segregation. And therefore . . . it is as misleading to speak of pictures of outside things being on our retinae as on a photographic plate. If we speak of pictures or images as stimuli we mistake the result of organisation for the cause of organisation, a mistake that is committed again and again. Köhler has called it the experience-error. I have formulated the actual state of affairs by saying: we see, not stimuli—a phrase often used, but on account of, because of, stimuli. . . . Things look as they do because of the field organisation to which the proximal stimulus distribution gives rise. This answer is final and can be so only because it contains the whole problem of organisation itself.[25]

The isomorphic thesis means that characteristic aspects of the physiological process are also characteristic aspects of the processes of consciousness. The old dilemmas of Associationism, which either accepted 'reality' as an arbitrary arrangement of stimuli or found an organising factor by going outside nature, are thus replaced by the concept of dynamic organisation.

There are many gaps in this theory, which I shall discuss further at a later stage; and *isomorphism* is not a wholly satisfactory term. Gestalt asserts a dynamic correspondence between physiological and mental activity-patterns, but is unable to show the point where they organically become one. However, in assuming that the ultimate unity is there and in going on to show how cognitive activity arises within the behavioural field, it does clear the ground and make the final solution possible. Its great virtue is that it understands the processes of the self as an integrative activity, and shows that the movement of knowledge is essentially *from a whole to the parts.*

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[24] Köhler (a). Thus, hydrogen occurs in a form composed not of hydrogen atoms but of hydrogen molecules (each composed of two hydrogen atoms). A completely new system is formed with two protons and two electrons, with motions quite unlike that of the single atom. Add an atom of oxygen and get water: we cannot say it is just two hydrogen atoms and one oxygen atom. Chemical analysis which does say so is saying that one sort of system has been transformed into other sorts of systems, and that in this transformation certain characteristics (e.g. total mass) have stayed constant. But not that water is just H_2O.

[25] Koffka (a) 98. Also Köhler (b) and Koffka (d) 163.

IX

And now, finally, to lay the ghost of a number of distortions and misconceptions with which I have dealt in these three chapters, I cannot do better than cite a splendid passage of Marx's, central to all understanding of his thought. It covers thoroughly most of the points I have already raised and others that I shall raise later. The full understanding of it supplies all we require for the further development of dialectics in the contemporary situation.

The production of use-values, of goods, is not affected in respect of its general nature by the fact that it is undertaken for a capitalist and under his control. In the first instance, therefore, we must consider the labour-process apart from the particular form it may assume under particular social conditions.

Primarily, labour is a process going on between man and nature, a process in which man, through his own activity, initiates, regulates and controls the material reactions between himself and nature. He confronts nature as one of her own forces, setting in motion arms and legs, head and hands, in order to appropriate nature's productions in a form suitable to his own wants. By thus acting on the external world and changing it, he at the same time changes his own nature. He develops the potentialities that slumber within him, and subjects these inner forces to his own control . . .

A spider carries on operations resembling those of the weaver; and many a human architect is put to shame by the skill with which a bee constructs his cell. But what from the very first distinguishes the most inexpert architect from the best of bees, is that the architect has built a cell in his head before he constructs it in wax. The labour-process ends in the creation of something which, when the process began, already existed in the worker's imagination, already existed in an ideal form.

What happens is, not merely that the worker brings about a change of form in natural objects; at the same time, in the nature that exists apart from himself, he realises his own purpose, the purpose which gives the law to his activities, the purpose to which he has to subordinate his own will.

Nor is this subordination a momentary act. Apart from the exertion of his bodily organs, his purposive will, manifesting itself as attention, must be operative throughout the whole duration of his labour . . .

The elementary factors of the labour-process are: first, purposive activity, or the labour itself; secondly, its subject matter; and thirdly, its instruments.[26]

[26] *Capital*, I (pt. 3) ch. 5 i.

It would hardly be possible to put more emphatically the points I have been urging. Where, in the light of such a statement, can vulgar-Marxism, which talks of acts and reflected thoughts that follow acts, hide its head? These words of Marx will continue to be of ever more relevant illumination, the more we carry on this inquiry. Since they occur in *Capital*, they make it impossible for the distorters of Marxism to argue that Marx's shattering discovery of dialectical unity in the Forties was nothing much and that he put it aside as he grew more sober.

Note on Terms. The polemical non-dogmatic use of terms by Marx, discussed above, is well brought out by A. Sohn-Rethel (*Modern Quarterly*, iii, 1947-8, 75): "It is not the consciousness of men", says Marx, "which determines their being (*Sein*) but, on the contrary, their social existence (*gesellschaftliches Sein*) which determines their consciousness." It would be a fatal mistake, however, to read this sentence as a statement of dogmatic philosophy. It is true, in the first part the words "consciousness" and "being" have still the ring of the abstracts known to philosophers. But they are used by Marx in an ironical sense, mimicking, as it were, the language of idealism. In the second part, the adjective "social" added to "existence" at once removes all possibility of reasoning about the statement in the abstract and of groping for purely conceptual definition of the term thus predicated . . .' That is, Marx is merely concerned with affirming the concrete unity of process, of which spirit and productive act are different aspects.

CHAPTER FOUR

Problems of Biology

THE BRIEF INDICATION given at the end of the last chapter of the lines on which a unitary notion of perception is emerging can serve as a link between the first stages of my argument and the second, in which I wish to examine cursorily a number of fields of thought in the light of unitary dialectics. First, then, I wish to continue with a fuller glance at the field of Biology.

For our purposes we may begin with the 18th century and the rapid growth of concepts of organisms and evolution. A multiple series of causes lay behind this movement of thought. Included in these were the violent economic transformations which came to a head in the power-engine and the factory system; the development of alchemy through the phlogiston theory into chemistry, with the discovery by Lavoisier of the fact of real chemical change; and the discovery by Dalton of quantitative measurement for the atom and a method for the stable expansion of chemical research. Accompanying all this came the growth of a concept of organism—first through the Cartesian opposition of atomic matter and mind leading in Stahl to a rigid opposition of organic and inorganic; then through a steady breakdown of the Stahl-schema by such work as Wohler's laboratory-creation in 1828 of the urea normally produced only by organic bodies, and by carbon-chemistry in general.

Further the general idea of organic formative forces was sketched out, idealistically, by the Physiognomists such as Lavater; and the idea of layers or levels of change by the geologists.[1] Work in botany and embryology led to the discovery

[1] It is important to note that essential work in developing an evolutionary sense was done by the *nature-philosophers*, idealists with a keen (exaggerated) conviction of formative forces in life. e.g Treviranus: 'In every living being there exists a capability of an endless variety of form-assumption ; each possesses the power to adapt its organisation to the changes of the outer world, and it is this power, put into action by the change of the universe, that has raised the simple

of the cell.[2] Von Baer noted how the different structures of the living body grew up out of the egg (1830). Schleiden in 1838 suggested that a plant developed by a series of divisions of small cells born from the union of male and female cells—the different cells going through particular changes to let them carry out their specialised functions in different parts of the plant. Schwann showed that this principle worked also for animals and that a nucleus supported in the middle of the cell-substance was the most important agent.

At the same time a sense of history as involving real change was growing up. Thinkers began to feel that history was not a mere kaleidoscopic shuffling of given elements, but revealed a developmental series of phases or levels.[3] Again a multiple set of influences were at work which included the expropriation of the peasantry and the advent of dominant industrial forms of production, the turning-back to the ancient world for a clue and the contact with eastern civilisations, the linking of the new organic concepts and chemical discoveries with the idea of history, the romantic quest for the free clan-life of the past and that quest's central image of bard, scald, druid, the discovery of tribal society as something different from class-society (especially by the Scottish historians and the Germans), botanical classifications and comparative anatomy.[4] Erasmus Darwin, for instance, shows in his poems how this multiple set of influences actually fused to beget the idea of organic evolution. Following the intuitive attempts at unification, for which there as yet lacked a rational explication, came the analytic investigation and delimiting of spheres of reference.

Among the first theorists of evolution, besides E. Darwin, were Kant, Goethe, and Lamarck. Kant in his *General History of Nature*, in 1755, explained the organisms of the world as the result of a gradual evolution by natural causes from the less to

zoophytes of the primitive world to continually higher stages of organisation and has introduced a countless variety of species into animate nature,'—see Geddes (a) 190.

[2]Hooke used the term *cell* in his analysis of plant-forms.

[3]Right back in the late 17th century Robert Hooke of the Royal Society, noting the different forms of the same species among domesticated animals, suggested that small regular changes in different members of the same species might in time develop lines of breeding so divergent as now to seem new species. He also had a vague notion of a time-scale in the rocks. (Hooke, and Edwards and Rossiter.) Problems of stock-breeding played an important part in founding the whole theory of evolution.

[4]E. Darwin, among other arguments, borrowed from Cuvier the idea that the species grouped together commonly had structures with a general design, so that there seemed only a certain number of forms, which had gone through special adjustment.

the more complex forms of life. He used the concepts of Selection, Adaptation, Environment and Inheritance. In 1790, in his *Critique of Judgment*, he sees an organic unity in the many forms of nature, with an evolution from simple beginnings and also with a principle of Purpose. The Universal Mother must be accredited, he says, with 'an organisation purposive in respect of all these creatures [inorganic life]: otherwise it would not be possible to think of the possibility of the purposive form of the products of the animal and vegetable kingdom.'

Lamarck transformed the ancient notion of the Chain of Being into that of a Natural Sequence of Organisms. He held that all classificatory schemes of animals into separated species are artificial; and that species are essentially fluid. Changes in the organism occur through use and disuse: organs specially exercised become specially developed; changing environment changes the animal by calling on new internal developments. Unused organs tend to atrophy and disappear; individual effects are transmitted.

Kant thus stressed the notion of inherent purpose, Lamarck that of environmental pressures. Both attitudes contributed to the questions Darwin kept on asking and the answers he found.

II

Darwin and Wallace developed the general theory of Natural Selection about the same time, both being strongly influenced by Malthus and his idea of a ceaseless conflict between Population and Subsistence.[5] (The phrase Survival of the Fittest was Herbert Spencer's, and was used by T. H. Huxley and others in ways never countenanced by Darwin to defend economic competition and social inequality.) *The Origin of Species* was published in 1859, shortly after Marx had completed his *Critique*. In 1858 Engels had written in a letter to Marx:

> So much is certain; comparative physiology gives one a withering contempt for the idealistic exaltation of man over the other animals. At every step one bumps up against the most complete uniformity of structure with the rest of the mammals, and in its main features this uniformity extends to all vertebrates and even—less clearly—to insects, crustaceans, earthworms, etc. The Hegelian business of the qualitative leap in the quantitative series is also very fine here.[6]

[5] Both Darwin and Wallace emphasised the key-part played by Malthus in their theories —see later, §iv.

[6] Marx (b) 114 : see Komarov, 193 and Bernal, 92.

A few months later when *The Origin* appeared, they acclaimed it as ending teleology in the natural sciences. In December, four months after publication, Engels wrote to Marx, 'Darwin, whom I am just reading, is splendid'; and Marx replied, 'Although it is developed in the crude English style, this is the book which contains the basis in natural history from our point of view.'

III

I have already indicated my main criticism of Darwin. He abstracts one side of the evolutionary process, Natural Selection. He is concerned to show that the apparent Purpose in the organisation and adaptation of creatures derives from the relation of favourable evolutionary variations to environment.

> I have now recapitulated the facts and considerations which have thoroughly convinced me that species have been modified, during a long course of descent. This has been effected chiefly through the natural selection of numerous successive, slight, favourable variations; aided in an important manner by the inherited effects of the use and misuse of parts; and in an unimportant manner, that is in relation to the adaptive structures, whether past or present, by the direct action of external conditions, and by variations which seem to us in our ignorance to arise spontaneously.[1]

And then in the modesty and carefulness which he shares with Marx, he is anxious to point out the possible limitations of his analysis. He adds:

> It appears that I formerly underrated the frequency and value of these latter forms of variation, as leading to permanent modifications of structure independently of natural selection. But as my representations have lately been much misrepresented, and it has been stated that I attribute the modification of species exclusively to natural selection, I may be permitted to remark that in the first edition of this work, and subsequently, I placed in a most conspicuous position—namely at the close of the Introduction—the following words: 'I am convinced that natural selection has been the main but not the exclusive means of modification.' This has been of no avail. Great is the power of steady misrepresentation; but the history of science shows that fortunately this power does not long endure.

Those are great words, among the greatest that men have uttered. They are to be compared with those comments in Engels' later letters where he turns round and gets the work of Marx and himself into a full focus—where he begins to realise how the grand isolate they have made must be broken down in terms of a yet more complete concept of the unity of process.

[1] Darwin (a) ch. xv.

Darwin himself, then, was able to point to one basic aspect of evolution which he had had to take more or less for granted. He could point empirically to a relation between selection and variation; but that was all. His tremendous picture of world-process had been made in spite of, and because of, the limitation he had imposed on himself. He founded the modern concept of process, but historical circumstance ensured that he could do so only by taking half of reality into his grasp. Evolution was defined as sifting out of variations by the pressures of environment so that those fittest for adaptation survived."

Taken crudely like that, the theory appears mechanical; but that does not mean we can reduce Darwin's work to a mechanist level. The isolation of only one side of the full dialectic process does in effect open the door to many mechanist trends; and in lesser hands the thesis could be made to uphold a mechanist concept of blind chance and of automatic pressures. But pervading all Darwin's work is a powerful realisation of the organic unity of process; and it is from this that the whole creative impulse of his thought derives. The total effect of comprehended process is incomparably stronger than the mechanistic attitudes into which his partial approach can be reduced; and this total effect must never be forgotten in the midst of any criticisms of his limitations.[8]

Thus, he strives to show man as a part of the world of nature, differentiated from it by the same processes as work in the differentiation of other animals.[9] He claims, for instance, that human powers of communication are the same in kind as those owned by beasts and birds, and differ only in degree. In the same way he seeks to link the emotional impulses of man with those of other animals. Yet,

> to the end, at least when off his guard, he continued to speak of man and the world as two separate though related things rather than as two phases of the one thing. This was, no doubt, due, in part at least, to the rigidity of language and its consequent limitations for the immediate expression of a new idea. But it was due also to the difficulty of assimilating and domesticating a new and radical idea within the mind so that it will function unconsciously there in adjusting one's instinctive thought and speech to the new idea.

Most modern scientists continue to speak of the material world of mechanical forces as the real and permanent world, and of man with all his mental faculties and moral purposes as an extrinsic chance-comer and

[8] J. Dewey (a) 1 ff.; Dewey points out the powerful 'contradiction' resolved in Darwin's very title, species being thought of as fixed forms.
[9] Darwin (b and d).

would-be usurper, that by some sort of 'biological accident', as Mr Santayana puts it, has got upon the surface of a physical world of mechanical forces that have no intrinsic connection with the higher part of his own life, his mental and moral life? This pseudo-scientific view appears in various ways in much of the representative poetry and fiction of the last 75 years, as well as in science and philosophy.[10]

Darwin's difficulty in stating the organic unity which he intuits and analyses is seen on the one hand in his definition of man as only different in degree from other animals, and on the other hand in his putting of man over against nature. Man is thus mechanically linked and mechanically separated. The two aspects which come together in the integrated attitude are kept apart. What Darwin means is to show man as part of universal process and yet to define his differentiation within that process. But, through his inability to find a unitary methodology for his unitary intuition, he sinks man among organic beings in general without showing the real differentiation and he cuts man away without showing the real linkage. Man is indeed part of the whole natural process, but his integration is on a higher evolutionary level than that of any other animals; the formative process has gone decisively further. Darwin 'makes no inquiry into the nature of the total or central unifying mental faculty of man, nor of the corresponding mental faculty of the animals; nor does he make any comparison between these two'.

IV

But before I pass on to discuss the efforts made since Darwin to achieve a unitary biology, I should like to point out an aspect of the thinking both of Darwin and Wallace which has been almost totally ignored. Both thinkers, we noted, found an essential stimulus in the work of Malthus, which sought to prove that men were doomed to perpetual poverty and social inequality because population increased in a geometrical ratio to the means of subsistence.[11] Malthus' work sprang directly from the convulsions of industrialism and ultimately sought to justify its cruelties and miseries, its exploitations. Now, both Darwin and Wallace wanted to understand what was going on.

[10] R.A. Wilson, 73f.

[11] Wallace says (a) i. 232, of M.'s *Principles of Population*, 'Its main principles remained with me as a permanent possession, and twenty years later gave me the long-sought clue to the effective agent in the evolution of organic species.' cf. i. 240, 361. Darwin said, 'With my mind thus prepared, I fortunately happened to read Malthus's *Essay on Population;* and the idea of natural selection through the struggle for existence at once occurred to me.' Bettany, 72f. Marx spotted the relation with complete comprehension (Marx (b) 198).

As scientists, they felt that the way to test out Malthus' doctrine would be to see how it worked in the animal and plant world. They used it as a guiding hypothesis; and they found that in some respects it worked. If one considers only this aspect of the relation between Darwin or Wallace and Malthus, one could say safely enough that the Darwinian thesis, like the work of Malthus, sprang directly out of the turmoils of industrialism and sought to justify the new forms of social inequality. And that in fact was the line which Herbert Spencer and T. H. Huxley took.

The connection between the thesis and the socio-economic developments of industrialism is certainly there; but the thesis cannot be reduced to the socio-economic situation. The basic difference between Darwin or Wallace and Malthus is that the two scientists are fundamentally working with a concept of the unity of process. At root they are using Malthus in order to deny Malthus; they are seeking the unifying outlook which simply transcends the whole problem as set forth by Malthus. And the extent to which they find that outlook can be gauged by the total divergence of their social philosophy from that of Malthus. Since they began with the application of the Malthusian principles, one would expect them to come out at the other end of their inquiries with a vindication of Malthus on a wide field embracing both the world of nature and the world of man. The opposite is the fact.

Darwin in *The Descent of Man* lays his whole emphasis on the socialising development of humanity; he attributes the successful evolution of man to a steady intensification of social and co-operative factors; and he expresses his faith that the future holds higher forms of socialised living on a basis of world unity. He asserts, 'The more enduring Social Instincts conquer the less persistent Instincts.'[12]

Darwin left the matter at that highly generalised level, which is however decisively aimed against any interpretation of Natural Selection among men on Malthusian lines. The whole emphasis is on the socialising or unifying factors in human evolution; and it follows that whatever impedes the growth of 'universal sympathy' or fellow-feeling is anti-human. Wallace, however, went much further along the same lines. What in Darwin is implicit, Wallace shouts angrily at the top of his voice:

> (In 1890-2) 'I showed that the only method of advance for us, as for the lower animals, is in some form of natural selection, and that the only mode

[12] Darwin (b) pt. I, chs. iv-v

of natural selection that can act alike on physical, mental and moral qualities will come into play under a social system which gives equal opportunities of culture, training, leisure and happiness to every individual. This extension of the principle of natural selection as it acts in the animal world generally is, I believe, quite new, and is by far the most important of the new ideas I have given to the world.[13]

And naïvely but powerfully he worked out his theory of the way in which capitalism inhibited human evolution:

Looked at broadly, I believe that the power of obtaining interest on capital, however great, with the corresponding desire of the owner of capital to obtain interest on it is, next to the private monopoly of land, the great cause of the poverty and famine that prevail in all the most advanced and most wealthy communities.[14]

Commenting on the callous lack of interest in England about the sufferings of the Indian and colonial peoples, he adds:

Neither do 'chronic and old-standing sores' at home affect them. The slums, slow starvation, murder and suicide from want, one-third of our population living without a sufficiency of the bare necessaries for a healthy life—food, clothing, warmth and rest; while another third, comprising together those who create the wealth of the nation, have not the amount of relaxation or the certainty of a comfortable old age which in a country deserving to be called civilised, every human being should enjoy.[15]

In these social attitudes of Darwin and Wallace we touch an interesting side-proof of the deep unitary nature of their thinking, which, without either of them being quite aware how it has happened, has transformed the Malthusian attitude into its direct opposite.

V

To what degree have the gaps in evolutionary theory been filled since Darwin's day, and what exactly are those gaps? The following statement by Needham can be taken as summarising the views of advanced biologists who have clarified Darwin's difficulty about differing levels of organisation in organic and inorganic matter, and who at the same time seek for a principle of continuity or unity in process.

From the scientist's standpoint, the organic conception of the world involves *succession* in time and *envelopes* in space. Taking the latter first, it

[13] Wallace (a) ii, 389 on two articles repriated in Wallace (b).
[14] Wallace in *Christian Socialist*, March 1884 (see a, ii, 244).
[15] Wallace (a) ii, 263f. These attitudes of Darwin and Wallace were given effective, though again at times naïve and one sided, development by Kropotkin.

is obvious that the different levels of organisation, for such we must call them, occur one within the other. Ultimate particles, the proton, electron, etc., build up atoms, atoms build molecules, molecules build large colloidal particles and cell-constituents and para-crystalline phases and the like, these in turn are organised into the living cell.

Above this level cells form organs and tissues, the latter combine into the functioning living body, and the bodies of animals, especially men, form social communities. As the central nervous system becomes more complex, so mental phenomena emerge, until the elaborate psychological life of man is attained. There is a sense in which minds include and envelop bodies, for the boundaries of thought are far wider than those of what the special senses can record, and minds interpenetrate as bodies cannot . . .[16]

The envelope within another envelope seems analogous with a past phase of development—i.e. 'inorganic molecules' existed before living cells, which depended on the right environment for the working out of the potentialities of the protein system, and so on. 'The fundamental thread which seems to run through the history of our world is a continuous rise in level of organisation.'

There is of course the further problem that rise of organisation is bound up with a corresponding loss of organisation elsewhere. But for the moment we can leave the problem of entropy, and consider the statement by Needham on its own. At a glance it shows a vast increase in the process-sense since Darwin's day. But if we scrutinise it, we find that a number of basic problems are assumed rather than stated. To assert that there is a continuous rise in organisation is important; to overcome some of the confusions in Darwin the notion of differing levels of organisation is needed. But we still have not explained how a differing level emerges—how it is maintained and in turn transcended. In short the problem of development or transformation can now be more clearly seen, but the solution is lacking.

VI

Let us look then in more detail at the attempts made to fill the gaps left by Darwin. These attempts may be grouped in three main sections. (I) The genetic theory. Following Darwin, it had been more or less taken for granted that special qualities were handed on to coming generations by the body conditioning in

[16] Needham (a), 18.

some way the sex-cells. But about 1890 Weismann put a sharp line of division between body-cells and germ-cells; and the problem was left rather in the air. Meanwhile, Mendel, head of an Austrian house of religion, had been working (through observations of the common pea) on the mechanism of heredity. He found that specific qualities of one generation were handed on as units. The causes of the qualities were these special units, independent like chemical atoms, which regularly produced the same effects under the right conditions. Formulas of inheritance could be worked out.

About 1900 his work was noticed by experts, including De Vries, and developed by Bateson, it provided the basis for Genetics. Others have extended it considerably: i.e. by the discovery (through analysis of the behaviour of nucleus in cell-division) of genes and chromosomes, and of the division of chromosome-substance as the basis of organic structure.[17]

(II) The expansion of biochemical and biophysical analysis of the processes of growth. We know a lot about the biochemistry and biophysics of digestion, of muscular contraction, of changes in the bloodstream, of vitamins (e.g. the way in which vitamin D is synthesised in our skin by photo-chemical action of ultra-violet light), of enzymes and hormones and organisers. The advance point of this study is to be found in morphology and morphogenesis.

Biochemistry has continued with the job of breaking down the barriers between organic and inorganic; but though this work is of the utmost importance it cannot by itself solve the problem of integrative levels.

(III) The functional analysis. This was brought forward by D'Arcy Thompson in his work *On Growth and Form*, in 1917, which sought mathematical formulas to define the relations appearing functionally in growth. The comparative-morphological evidence heaped up (mainly by German research) was basically mechanical, concerned with resemblances in post-mortem structures of adult and embryonic organisms. Such evidence deals with structure and shape as things-in-themselves. Thompson introduced the idea of functional relations in organic structure, which he tried to define by the use of mathematics and physics; he used Cartesian co-ordinates to effect the geometrical transformations of organ or organism. He thus led to an active development of experimental zoology and to an extensive refinement of the mathematical definitions of growth.

[17] R. A. Fisher (a); J. B. S. Haldane (a).

VII

At times large claims have been made for these contributions Bateson wrote in 1908:

'For the first time Variation and Reversion have a concrete, palpable meaning. Hitherto they have stood by in all evolutionary debates, convenient genii, ready to perform as little or as much as might be desired by the conjuror. That vaporous stage of their existence is over, and we see Variation shaping itself as a definite, physiological event, the addition or omission of one or more definite elements; and Reversion as that particular addition or subtraction which brings the total of the elements back to something it had been before in the history of the race.

The time for discussion of Evolution as a problem is closed. We face that problem now as one soluble by minute, critical analysis [18]

But in fact the unifying hypothesis was still lacking. Genetics, physiology, biochemistry, morphology, and so on, have all contributed important elements of analysis; and in some measure have started coming together—thus, inquiry into the shape of chemical molecules leads to biological issues. Yet the full unification is absent; methodology is confused; there is a lack of clarity in the use of basic terms such as *purpose*, *field*, *growth*, *homology*. Prenant cites a chemist saying: 'Biologists do not apply scientific method in that they do not define their terms.'

Thus, the mechanism of variation, but not its origin and nature, is importantly clarified by the discovery that mutations of both genes and chromosomes can be artificially caused by exactly measured use of X-rays and other radiations.[19] The rate of mutation of many genes can be speeded up by using chemical agents or by raising the temperature of breeding. This experiment disposes of the position that the genes are entities whose action is immutably fixed by internal characteristics; but that is all. We may claim that it becomes clear there is an active relation on both sides between gene and environment. That is a very valuable exposition, but the final problem remains.[20]

VIII

Many biologists have been well aware of the unsatisfactory nature of the one-sided approaches or theories, and of a mechanical effort to put Variation and Natural Selection together without any real unity of the term. Thus, Hogben points out

[18] Bateson, 48f.

[19] On the other hand 'genes of mutation' have been found, e.g. in maize or drosophilae.

[20] G. Teissier thinks it explains the whole problem, 42f.

that Darwin was making a tentative effort to touch on the problem of the intrinsic and extrinsic aspects of evolution (selection and biological make-up) in his distinction between Natural and Sexual Selection. Dealing with the intersterility of two sorts of drosophilae, Hogben points out that the textbook explanation (that it is due to the large inversion of the third chromosome) may well be correct—the inversion presumably being the result of a succession of small inversions of the type which come from X-ray radiations:

> Such inversions may be associated with partial intersterility which might become complete if several occurred successively. This may well have happened. The view that selection of favourable mutants furnishes an all-sufficient explanation of evolution does not help us to see why it should have happened.[21]

Again, discussing Stern's work with X-radiation in isolating intersterile races in Drosophila melanogaster:

> Stern's work suggests an explanation for the occurrence of chromosome species of the type which Lancefield describes (in isolating two intersterile races of D. obscura differing in size of Y-chromosome), if we grant that circumstances in nature from time to time result in a frequency of mutation with no other parallel in the experience of standardised laboratory cultures. If so, the circumstances responsible for mutation itself are more significant than the action of selection in producing species which differ in the architecture of the germ-cells. Bacon said that the subtlety of nature is many times greater than the subtleties of our reasoning powers. So I do not, and have never, suggested that this is the only possible explanation of the facts. I do insist that the mechanical view of evolution as the interplay between external selective agencies and mutation-rate raised to the status of a universal physical constant in the mathematical formulation of the theory does not offer a better one.[21]

If by 'responsible circumstances' Hogben means the *whole* of the circumstances of transformation, inner and outer, then his statement is definitely on the lines of unitary thought.

Other biologists have tried to fall back on the possibility of mutations of a sort never encountered in laboratory-tests. Thus, Goldsmidt distinguishes quantitative differences (directly adaptive or capable of interpretation as indicators of unknown physiological adaptations, e.g. colour, pattern of larvae) and qualitative differences between species. The latter he thinks could never have resulted from any quantitative accumulation

[21] Hogben, 284-6. The two sorts of D. and D. melanogaster Meig. and D. simulans, Sturt.

of variations; and so he falls back on the strange mutations.[22] Cuénot also cannot swallow the cumulative process and argues that many adaptations may have arisen as pre-adaptations.[23] Sewall Wright seeks a many-sided approach:

> It has been pointed out, however, that the most favourable conditions for a continuing evolutionary process are those in which there is, to a first order, balanced action of all the statistical evolutionary factors. It is consequently to be expected that in most actual cases indications can be found of simultaneous action of all of them.[24]

But he does not show how Simultaneous Action actually works as a transforming factor. Goldsmidt's Mutation or Cuénot's Pre-adaptation also beg the question. Such suggestions may raise important aspects of the truth, and may show a healthy refusal to accept mechanistic formulations; but they cannot solve the problem.

IX

In such a situation, where a strain of mechanical connections hangs heavily on the material, the best thing is perhaps to turn to those who are pressing an idealist solution. Such solutions may be merely obscurantist, a withdrawal from the real problem. But on the other hand they may prove to be labouring with an intuition of the needed approach, for which they have no available logical method. The idealistic form then becomes a mode of protest against a false or inadequate rationality.[25]

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[22] Goldsmidt (a.b.c.).

[23] Cuénot.

[24] Sewall Wright, 181. He suggests that evolution may have operated differently in different groups. In some it may come mainly through Selection-pressure (following change in conditions); in others through random differentiation of small local populations, with or without intergroup Selection. Mutation-pressure may even dominate in other cases. Sometimes evolution is gradual and fine-grained; sometimes rough and ready, new species coming direct from hybridisation and polyploidy.

Timofeef-Ressovsky thinks the genetically analysable material of evolution (mutations and combinations) and in general known factors (Mutability, Selection, Isolation, Population-waves) provide all the premises needed to explain the mechanism of micro-evolution and of geographical variation, but he wavers when it comes to micro-evolution (123).

[25] It is from this angle that we must understand Lenin's undogmatic agreement with Gorky (Letter, 25th Feb. 1908), 'I think that the artist can draw much profit from each philosophy. In short, I am altogether and without reservation in accord on this point, that in the problems of artistic creation you are a better judge than anyone and that, drawing your conceptions from your artistic experience and from a philosophy, let it be idealist, you can arrive at results that will enormously benefit the working-class.'

For we must not forget that in the past Idealism has stood for the active approach, for the intuition of dialectical complexities which a logic clogged with mechanistic elements could not compass. And something of this function will remain for the 'irrational' argument until there is not a shred of mechanistic assumption in our thinking. 'The chief defect of all hitherto existing materialism—that of Feuerbach included—is that the object, reality, sensuousness, is conceived only in the form of the object of contemplation, but not as human sensuous activity, practice, not subjectively', Marx jotted down in Brussels in the spring of 1845. 'Thus it happened that the active side, in opposition to materialism, was developed by idealism—but only abstractly . . . '

What then have the dissident idealist theses had to say in our present discussion?

X

Let us glance at the Emergent Evolutionists, such as J. S. Haldane and Lloyd-Morgan. They have a strong sense of process. 'Life manifests itself in two ways', says J. S. Haldane, 'as structure and as activity. But we also recognise—a biologist feels it in his bones—that this is living structure and living activity.' With the emergence of life in individual organic forms on the surface of the earth, nature moved into a new evolutionary phase. Life, mind, and purpose, latent and potential in the pre-organic period, emerge (he says) to actuality in the organic world, in an ascending series from plant to man.

The Emergent Evolutionist (the Vitalist, in his later form) thus holds that with each new phase something quite new happens.[26] But because he is fighting to preserve the idea of the continuity of a free life-principle, he has to take back something of his admission about the emerging-new. The new turns out to be the actualisation of something latent or potential in the old. The new is reduced to the old in the last resort; and the unity of the universe becomes unreal, so that it is necessary to introduce some immanent principle, God, who is realising himself in the continual change of potential into actual. Otherwise the structure collapses.

The philosophical problem is as old as Aristotle, but it gets new urgency from the application to new problems really arriving out of enriched biological experimentation. The remarks in the previous paragraph may seem a crude statement

[26] E.g., Sellars, who sees Nature at certain 'Critical Points' gathering up her old resources for a new experiment and breeding a new quality of existence.

of the contradiction in Emergent Evolution; but it represents an ever present crux in the statement of the case. J. S. Haldane says that when the problem has been probed to the core, the answer will most likely be, not that the mechanical will give an explanation of idea and mind, but that life and mind and personality will eventually give the explanation and significance of mechanical law and 'inorganic matter'. That is, he ends by merely reversing the mechanist equation.

The idealist contradiction appears again in Lloyd-Morgan's distinction between *activity* and *Activity*—between what is 'scientifically relational in natural causation' and metaphysical direction; between mechanism and an emergent directive principle. For him the full story of evolution includes on the one hand the progressive unfolding of the metaphysically directive principle. To escape theology he denies that the metaphysical direction intervenes in natural causation. But the problem of unity is in no way solved. The theory amounts to the mere statement of the gap that needs to be closed. The introduction of the metaphysical direction merely abstracts the problem that has to be solved in concrete terms.[27]

XI

What men like J. S. Haldane and Lloyd-Morgan are saying underneath is that some vital connecting link is missing from the Darwinian theory. No matter how many gaps are filled up by Mendelism, bio-chemistry, mathematics of functional relations, the mechanist flaw remains. They are trying to synthesise the concepts of Development and Continuity; and they are at least clear that the other systems do not meet the issue they posit.[28]

One important aspect of the dispute was illuminated by Woodger in his *Biological Principles*. Before his formulation there had been considerable confusion among dissident biologists over terms; and many inclined to Vitalism through an inability to distinguish the 'vitalist principle' from the organising relations, the organisation of the living system. This con-

[27] I may be accused of neglecting the distinction between Substantial Vitalism and Emergent Vitalism (as laid down by C. D. Broad). But the Vitalist still has the same problem: he cannot get Continuity and the New really into the same picture. This dilemma runs through the magnificent work of Alexander, where a powerful sense of real process is unable to make more than a metaphysical union of Substance and Process, Unity and changing levels.

[28] It is of interest that Lenin cites Lloyd-Morgan's early work with some approval, as showing an agnostic who can see through the subjectivism of K. Pearson (Lenin (b) xi. 244).

usion was inhibiting the proper study of organising relations, nd putting in its place a mysticism of organic unity. Woodger uggested that Vitalism should be a term limited to propositions f the type: 'the living being consists of an X in addition to arbon, hydrogen, oxygen, nitrogen, etc. plus organising elations'.

That left the question of X open, and organising relations ould be investigated without reference to it. But the problem hich the Vitalists were raising was not thereby met.

XII

Let us turn then to the leading spokesman for an organic utlook, Whitehead. He began by trying to work out a universal lgebra, then collaborated with Bertrand Russell in *Principia Mathematica*, the quest for a universal mathematical logic. His trong sense of the fullness of things ensured that he and Russell would part. Studying Einstein, he rejected Einstein's account of Relativity for much the same reasons as he parted from Russell. He came to the conclusion that Einstein, though correct in holding a body's motion to be dependent on the observer's motion, was philosophically anarchic and described a universe of units moving along isolated courses uninfluenced by Time's process or by controls from outside. Again Whitehead's sense of the many-sidedness of life revolted against a narrow approach.

His work on relativity-mathematics in 1919-23 came to conclusions similar to those of E. A. Milne's kinematical theory. At the age of 63 he gave at Harvard the lectures later collected as *Science and the Modern World*. In this and later works he sets out to vindicate the wholeness of experience against all mechanist restrictions and divisions. He rejects equally the subjective outlook which cuts off sense-data from the outer world, or the mechanist view which reduces everything to quantitative relations. He rejects such mechanist concepts as the emptiness of space, which needs such imaginary filling as ether.[29] He rejects the mechanist division of body and soul, mind and matter.

He rejects 'the divorce of science from the affirmations of our aesthetic and ethical experience'. He makes a long and excellent attack on the abstractions of Newtonian science. Some of his remarks in this connection are worth citing here, since they

[29] 'The notion of empty space, the mere vehicle of spatial inter-connections, has been eliminated from recent science. The whole universe is a field of force, or in other words, a field of incessant activity.' (c) 186.

help to clarify what I said about the Newtonian Isolate. Newton, says Whitehead, used certain abstractions to get at grips with nature; and only because of that work of his can we now face up to the 'welter of transformations'. But the fact remains that now we must criticise him for his limitations.

> Newton's methodology for physics was an overwhelming success. But the forces which he introduced left Nature still without meaning or value. In the essence of a material body—in its mass, motion, and shape—there was no reason for the law of gravitation. Even if the particular forces could be conceived as the accidents of a cosmic epoch, there was no reason in the Newtonian concepts of mass and motion why material bodies should be connected by any stress between them. Yet the notion of stresses, as essential connections between bodies, was a fundamental factor in the Newtonian concept of Nature. What Newton left for empirical investigation was the determination of the particular stresses now existing. In this determination he made a magnificent beginning by isolating the stresses indicated by his law of gravitation. But he left no hint why, in the nature of things, there should be any stresses at all. . . .
>
> By introducing stresses—in particular the law of gravitation—instead of the welter of detailed transformations of motion, he greatly increased the systematic aspect of Nature. But he left all the factors of the system—more particularly mass and stress—in the position of detached facts devoid of any reason for their compresence.[30]

Whitehead accepts the need of science to abstract; but attacks scientists for then holding up the abstraction as reality. This attitude he calls the Fallacy of Misplaced Concreteness. The notion of Simple Location is just such an abstraction which functions by making of the world a dead thing. Mechanistic science 'bifurcates' the world: i.e. it draws a line between what interests it for a specific purpose, and what doesn't; and ignores the latter as unreal.[31]

He insists on the universality of process. 'There is no Nature apart from transition.'[32] He sees that we must accept the full implications of an active relationship between object and environment; and makes a resolute effort to find out what those implications are. Such a relationship is between, not two things, but two processes. 'There is no possibility of a detached self-contained local existence. The environment enters into the nature of each thing.'[33]

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[30] Whitehead (d).
[31] Whitehead (a) 26 and (a) 84.
[32] Whitehead (c) 207.
[33] Whitehead (c) 185, 188.

Passive geometrical relations are mere abstractions. Every isolate which we make in order to obtain such relations must always be restored to its place in the moving interrelated whole. Time is necessary as a measurement to us; but in Nature there is only 'creative advance'.

To define a universe of process, Whitehead uses the term *event* for each isolatable moment of process. Events may be divided into smaller and smaller units till we come to the ultimates, the 'actual occasions' or 'entities', which are the 'limiting type of an event'. Occasions or entities can form a connected time-series; and when they are substantially the same, they form a definite physical fact like an electron or a kiss. (An actual occasion owns a minimum of time.) Each event is new and unique. Whatever produces an event, creates novelty: Whitehead calls it a Concrescence. But an event is simultaneously a finite individual thing and an act, a process, linked with the rest of the universe. The interdependent pattern of things is simultaneously an interdependent pattern of processes.

How does the interdependence work out organically, in terms of process? Life Whitehead defines as 'the capacity for appropriating experiences into a unity'. This appropriation he calls Prehension.

> Thus concrete fact is process. Its primary analysis is into underlying activity of prehension, and into realised prehensive events. Each event is an individual matter of fact issuing from an individualisation of the substrate activity.

XIII

Up to this point what has been cited of Whitehead's thought is essentially in the key of unitary dialectics. But now, in his eagerness to vindicate the organic unity of the cosmos, he introduces a number of questionable formulations.

To define prehension, he says that everything in the universe takes note of everything else. This taking-note-of is a feeling of or for the presence of everything else. To realise the life of the universe, we must see how 'the energetic activity considered in physics is the emotional intensity entertained in life'. In *Process and Reality* he seeks to show how the energy-forms recognised by physics (wave-lengths, vibrations, atomic particles) are scientific abstractions from what in ourselves we know as types of emotion. He thus defines the 'organic connections between things in terms of something like feeling'.[34]

[34] D. Emmet.

Besides events and occasions, he says, the universe contains *eternal objects.* The flux of the world-process possesses in its own right only spatio-temporal chacteristics. All other qualities come from the Ingress into the flux of Eternal Objects, which constitute the Realm of Possibility and which become concrete (real) only in so far as they are Ingredients into Events. The Union of, or Ingress of Eternal Objects into or with Events is what makes up reality of concrete occurrence.

The actual world is thus a selection, one among an infinite number of actual worlds (worlds latent in the Realm of Possibility).[35]

> We conceive actuality as an essential relation to an unfathomable possibility. Eternal objects inform actual occasions with hierarchic patterns, included and excluded in every variety of discrimination. Another view of the same truth is that every actual occasion is a limitation imposed on possibility, and that by virtue of this limitation the particular value of that shaped togetherness of things emerges.

But what controls the whole of this involved movement? Whitehead argues that the principle of limitation must stand outside the totality which comes into being through its application. (The principle of limitation is also the principle of concretion.) It cannot be located within the flux of process, nor can any reason be found for it, since from it all reasons flow. So,

> God is the ultimate limitation, and His existence is the ultimate irrationality. For no reason can be given for just that limitation which it stands in His nature to impose. God is not concrete, but He is the ground for concrete actuality. No reason can be given for the nature of God, because that nature is the ground of rationality.

XIV

A few more aspects of Whitehead's thought may be briefly summarised. Every occasion, he says, is made up of three parts: the data to be experienced, the way in which they are experienced, and the final experience or enjoyment. The first aspect may be said, in a sense, to exist before the experience; but not so the Form or the Enjoyment. Thus, a smell or a colour only exists in the act of union, which is the experience.

Every Form like every Event is unique, selected from an infinite number of possibilities. Thus, in event or form the

[35] Whitehead (a).

principle of both active and negative prehension are included. Certain possibilities are excluded, others prehended.' Each occasion, whole in itself, is externally related to all other occasions.[36] The full occasion is inexplicable without purpose or aim. Involved in every negative or active prehension is an aim, which is the way in which the subject of the experience enjoys the data of the experience.

Aim enters into all human action, as we know from experience. 'In fact we are directly conscious of our purpose as directive of our actions. Apart from such direction, no direction could in any sense be acted upon.'[37] And since Feeling has been defined as fundamental in the nature of universal process, the feeling of purpose exists in all nature, in all the prehensive acts which make up 'the underlying activity of the world'.

XV

One cannot overpraise Whitehead's emphasis on the unity of process and on the consequences of the concept of unity. Once for all, he makes the necessary criticism of the phase of physical science between Newton and Einstein. But there are a number of points at which the dualism he abhors enters into his work.

As in the thought of Alexander and Lloyd-Morgan, the deity of purpose is abstracted and set over against the universe. That a dexterous metaphysical argument seeks to implicate this Deity or Purpose in the workings of process is of no avail. By definition value or aim has been set outside the universe; and thus a split runs through the heart of the thesis. Individual purpose or form, the 'selection of possibilities', the whole living moving structure of concrete events, gains meaning only in terms of something outside process. Whitehead has sought above all to make 'value' concrete, and he ends by making it a metaphysical ghost. Like Alexander and Lloyd-Morgan he cannot take the step which fully identifies process and purpose; for then he fears that purpose will evaporate.

This is the key-point, which in the end reduces Whitehead's thought to the same conclusions as any other idealism. But to say that is not to ignore his considerable importance in the history of critical thought. In a way, we can say that he takes the Hegelian system to pieces, throws much of its idealist-mechanist apparatus overboard, and then refurnishes the core to make it fit in with the advances of scientific thought since Hegel. In

[36] Whitehead (a) 198.
[37] Whitehead (c) 213.

Whitehead, the Hegelian unity has been galvanised into a far more active relation to process, and made mathematically respectable in terms of post-Einstein concepts.

> The doctrine of prehension is simply the (Hegelian) doctrine of internal relations in a developed form. The doctrine is, indeed, the key to that 'mix-up-edness' of Whitehead's universe. . . . But just as Whitehead's whole is living and creative, whereas Hegel's is static and complete, so his development of the doctrine of internal relations includes an element of activity, an active *taking into relation* instead of a passive *being in relation*, which differentiates it from Hegel. For this active 'taking into relation' Whitehead uses the term 'prehension'.[38]

Whitehead again uses certain aspects of Hegelian logic, which he tries to bring more up to date—for instance, the idea of the unity of opposites:

> The Universe is many because it is wholly and completely to be analysed into many final actualities. It is one because of the universal immanence. There is thus a dualism in this contrast between the unity and multiplicity. Throughout the Universe there reigns the union of opposites which is the ground of dualism.[39]

But, like the Vitalists, he levels and flattens when he means to distinguish levels of energy. His concept of Prehension reduces all things and creatures to one level of Feeling, and he therefore introduces his metaphysical Purpose to maintain the hierarchic structure which would otherwise collapse.

XVI

But we have not said the last of Whitehead when we have pointed out his failure to preserve Form or Purpose without metaphysics. Implicated in his failure there is a brave effort to tackle a fundamental problem which has so far evaded successful formulation by anyone. It is the X or Woodger's formal separating-out of living constituents; and the problem connected with it may be stated thus: If the Universe is truly a unity of process, what is it that unites men with other animals, trees, viruses, crystals, gases, light itself? What have they all in common?

To answer that all are material, that they all are forms of matter, is to answer nothing. If by matter we mean the Newtonian abstraction, then we are making a purely mechanist answer. If by matter we mean the whole living process, then we are

[38] Joad, 578.
[39] Whitehead (f) 245.

committing a tautology. Nor is the problem solved in the least by substituting some such term as Energy for Matter. In this context Energy is just another name for Process, and we are back where we started.

Somehow or other we have got to meet the issue. The X remains; and until we have a logic and a methodology capable of dealing with it, Vitalist theories like Lloyd-Morgan's or Organicist theories like Whitehead's are going to try to fill the gap with spirit, God, *élan*, nisus or a metaphysical principle of creative purpose.[40] Almost the whole of language is soaked with anthropocentric attitudes. We simply do not possess a word which can simultaneously express the activity of the atom and the activity of a human being. We can express mechanical relations and we can express personal relations; but we lack the integrative vocabulary. All words such as activity or conflict suggest a human agent; and in fact we can hardly write an intelligible sentence about the universe without using a hidden mass of anthropomorphic terms. That is one of the difficulties with which we are faced in trying to work out a dialectical outlook.[41]

But unless we make the best use we can of available terms, the future will never move towards a more adequate logic. We must temper our criticisms of Whitehead's metaphysic with an attempt to see what real concretion of terms he is seeking to bring about.

He is quite clear about a difference of levels of organisation in the universe, and wants to keep the idea at the heart of his thought:

> One conclusion is the diverse modes of functioning which are produced by diverse modes of organisation. The second is the aspect of continuity between the different modes. There are borderline cases, which bridge the gaps. Often these are unstable and pass quickly, but span of existence is merely relative to our habits of human life. For infra-molecular occurrences a second is a vast period of time. A third conclusion is the difference

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[40] It is not enough to point out the dangers of 'obscurantist' Organicism (see Bukharin (a) 26; also H. Frankel). It is better to find out what Organicism is getting at and to incorporate the vital elements in a fully dialectical outlook.

[41] Note how Engels (in passage cited above Ch. 2 § iii) spoke of 'planned activity' throughout organic life. Among attempts to deal with this problem may be cited Semon's theory of Engrams—that when living matter is affected by a stimulus, its quality can never be the same as before. The residual effect is the *Engram*; their sum is the *Mneme* of the organism—its organic love or memory.

Cf. Geddes 'We cannot ignore the most salient fact, that all the manifold chemical processes are correlated and controlled in a unified behaviour, in a purposive agency. Even the amoeba is no fool.' (a) 74.

in the aspects of Nature as we change the scale of observation. Each scale of observation presents us with average effects proper to that scale.[42]

But, in the interests of continuity, he blurs out distinctions with his universal Feeling; and then he has to restore Form by means of the intrusive and metaphysical 'principle of limitation'.

At times the metaphysical dualism which he is trying to overcome appears starkly in his wording, as when he asks what is *behind* the activity which is nature. 'How do we add content to the notion of bare activity? Activity for what, producing what, activity involving what?'[43] But there can be no question of anybody adding content to a notion of activity. The content is integral in the activity and cannot be abstracted or 'added'.

Similarly, his whole statement of the relation of Event and Eternal Object reveals a sheer metaphysical split.

Whitehead notes the 'fallacy of misplaced concreteness'—e.g. the categories of suostance and attribute—which is the same as the fallacy of hypostasisation; yet he himself commits this fallacy in his isolation and definition of single events.[44]

But no matter how often we return to his flaws, we cannot argue away the problem of stating simultaneously continuity and hierarchic levels—of stating what 'activity' men share with crystals and plants, and how it is that environment and object are one in the moment of transformation.

XVII

It is no longer enough to say with Prenant:

In biology dialectical materialism is opposed both to vitalism and to mechanical materialism, which are both really metaphysical theories. It refuses to make a sharp distinction between the physical and biological sciences, to reserve causal determinism to the former and to appeal to terminology in the latter. But neither does it suppose that biology must reduce itself to the physical sciences. It affirms the unity of the world, in which neither life nor human society constitute domains apart, but it also affirms that this unity expresses itself in qualitatively different forms of whose distinctive characters one should never lose sight.[45]

[42] Whitehead (d) 73.
[43] Whitehead (c) 200. Note how close he is getting to Lloyd-Morgan's metaphysic of Activity.
[44] Craik, 14. See Frankel for the accumulating weaknesses of his position.
[45] Prenant, 86. Scheler (a and b) represents the fully rigid effort to find special active principles in each level (matter, life, mind).

To say all that is the beginning of dialectical wisdom; but only the beginning. Levels do not simply exist as qualitative differentiated forms. To leave their definition at that is to ignore or deny the unity of process. It is not enough to say that each level has its own laws, but that the law of each level is a variation of the fundamental dialectical principles of the universe.

That is to abstract 'principles' in somewhat the same way as Whitehead abstracts purpose. The levels are one as well as different. To take an obvious example, a human being includes what Needham (§ 7 above) has called a whole series of envelopes starting from the ultimate particles and rising up through atoms, molecules, colloids, etc. into mind. But these envelopes are not the individual at different levels. Nor can the individual be abstracted at the level of mind. The individual is all the levels, and further he is an individual. It is not enough to point out that human individuality exists on an integrative level all its own. We need a unifying concept as well as a differentiating one when we consider the levels.[46] Since the universe is one as well as various, the levels are dialectically one as well as different. The full dialectical problem is to grasp the differentiated unity: to think simultaneously of differing levels and of a single process.

Whitehead's great value is that he forces us to surrender the idea that to state difference and unity in the abstract terms of the Prenant passage is to *realise* the dialectical fullness of process. A gap remains. The processes of transformation are still obscured by a metaphysical approach.

XVIII

Another form in which abstraction intrudes to prevent a full apprehension of process is to be found in the contradiction between the morphological and the physiological evidences in evolution. From the former there has been built up a picture of evolution as a process from the simple to the complex, from the elementary to the perfected. Despite many naïve value-judg-

[46] Another effort to define 'prehension' is made by John Laird in terms of *Natural Election*—the fact that everything has something which matters to it or to which it matters (like the magnet and iron filings). Alexander (b : Ch. x.) agrees, and says that value is then in some sort a basic feature in the universe—'as the chemists used to say long ago about the satisfaction of one atom by another within the molecule. Here . . . value remains objective. Only the distinction between the individual and the species has not yet emerged in the scale of existence, and all interest of one thing in another is objective,' 298. For the dangers of Prehension as a 'property' of matter, see end of Ch. 4 A below.

ments, the morphologists have been able validly to show an extension of structure, and to identify it with Progress, with an onward-upward evolutionary movement. On the other hand the Physiologists have recently been able to show that in their sense evolution is regressive.

In effect it appears in what concerns the power of synthesising indispensable organic compounds, a power much more developed among certain elementary organisms than among the vertebrates. It appears equally in what concerns the aptitude to demolish waste substances, an aptitude more extended in the most ancient and morphologically most simple groups. Facts piling up on facts in an impressive way, the physiologists arrive at this very general affirmation: Evolution, in its ensemble, is essentially characterised by *losses of function.*[47]

Evolution can thus be defined from different levels as a progressive movement from the simple to the complex, or as a regressive loss of function. Lwow sums up: 'Evolution is a specialisation and not a progress.'[48] It becomes clear that our rationalised ideas of progress as a simple upward movement must go overboard; we must learn to think simultaneously of an extending expanding movement and a continuous loss of function. On the level of physics the same problem appears in the contradiction between the law of the conservation of energy and that of entropy.

XIX

Yet another contradiction appears in biology in the opposition of genetics and the physiology of development. Many biologists have argued that the progressive differentiation of the embryo from the egg reveals a process which cannot be reconciled with Mendelian genetics. Lillie claims

a division of the phenomena of the life-history into three major components: morphogenesis, embryonic segregation, and genetics. Morphogenesis is the development of form, organs, and the special functions. Embryonic segregation concerns the origin of specific potencies as defined.

[47] Pacaud, 88.

[48] Lwow, 253. See Needham (a) 207-32. Cf. the contradiction between what Milne calls t-scale of time and τ-scale. The latter is invariant, absolute; the former presupposes an expanding universe, which came into existence at a certain point in time. (J. B. S. Haldane (c) 93.) We seem here to touch the basic disequilibrium, between transformation and structure, in the universe: 'It is not a fanciful speculation to see in the interplay of radiation keeping t-time with matter obeying the classical laws of dynamics on the τ-scale a phenomenon giving rise to the possibility of change in the universe in time, and so an origin for the action of evolution in both the inorganic and organic universes,' Milne (b) 354.

Genetics concerns the determination of phenotypic characters throughout the life-history. . . . They are independent variables of the life-history.'[49]

The negro biologist Ernest Just brought to bear a unitary outlook on this problem, and showed how a correct methodology based on process-logic resolved the contradictions.[50] He saw that genetics and the physiology of development are merely 'two aspects of development'. He threw over the whole theory of segregation as metaphysical—abstracting a section of process and then arguing back from effects to conclusions about the process producing those effects. He showed that what actually happens is a genetic restriction of the original pluripotency. The egg becomes unipotent. The blastomeres of this unipotent system (with first cleavage, or later, according to the species of egg) become further restricted and give rise to certain areas of the embryo. The loss of potencies goes on simultaneously with increase of nuclear material, which is due to elaboration of nuclear stuff out of the ground-substance (cytoplasm). 'Hence, differentiation during cleavage is the result of a restriction brought about with the removal of material from cytoplasm to nuclei. On the basis of the chromosomal make-up of the nuclei, the removal is regarded to be by the chromosomes.'

The genes (components of the chromosomes) are then held to act in heredity as do the chromosomes in genetic restriction during differentiation. 'Then the gene does not act positively as carrier of the factors of heredity. Rather, these are allocated in the cytoplasm. The genes function by removing material and thus free the cytoplasm-located factors of heredity to express themselves.'[51]

By seeing differentiation as the result of nuclear increase out of cytoplasm, we relate development to cytoplasmic reactions. 'On the other side, differentiation is marked also by an increase

[49]Lillie (a) 528.

[50]Just (a) 267-311. See also Needham (c) 656 ff and 340 ff.

[51]He adds, 'This conception offers for the first time an interpretation of the role of the gene. For the examples given, this conception furnishes a better interpretation than that furnished by the geneticists. The interpretation which the conception suggests for sex, haploidy, normal hermaphroditism, intersex-conditions, etc. is far more simple and direct and more consistent with the observed phenomena than any suggestion so far proffered.' Contrast Morgan's bewilderment as to how the 'genes in the chromosomes produce the effects in and through the cytoplasm' (a) 26 and (b) 285.

Goldschmidt has argued that all genetical phenomena are expressions of a continuous molecular pattern in the chromosomes (mutations = position-effects derived from minute structural rearrangements). This theory still attempts to maintain mechanism.

in the amount of ectoplasm. To nucleus, cytoplasm and ectoplasm the conception assigns 'more definite roles in development' than previous theories. By relating nuclear increase and the gene, by ascribing physiological action to the gene, the thesis brings together the physiology of development and heredity as 'merely two aspects of the life-history'.

In dealing with the changes occurring during embryogenesis, Just sums up:

> The progressive increase of nuclear and of ectoplasmic material are two changes that occur during cleavage to which as causes I relate embryogenesis. With these I place the alternating hydration and dehydration of the protoplasmic system, a rhythmical phenomenon in the cleaving egg whose surface at fertilisation underwent rapid hydration and dehydration. From then onward the egg establishes new equilibrium with its medium with each cleavage-stage.
>
> At the beginning and at the end of cleavage when ectoderm and entoderm are laid down the egg is a morphological entity. In the endeavour to answer the question—how out of one visible structure, egg, arises another visible structure, embryo?—I have dealt with visible structural changes which take place between beginning and end-stages. These form-changes arise from activity in the cytoplasmic ground-substance. Hence, I relate the origin of the tangible embryo to tangible cytoplasmic changes. The cytoplasm builds the embryo. Then it builds all of it, including characters called Mendelian.[52]

Thus we see in Just's work a unitary approach defeating the limiting abstraction. The mathematics of Mendelism are of great importance; but once they are taken to mean that the gene can be abstracted from the whole cell, they turn the gene into a metaphysical entity and reduce life to a mechanism. Just has shown the way out of this dilemma.

More, by showing how egg changes to embryo (as a result of the shock of fertilisation) by a series of rhythmical acts which restrict potency in terms of an extending determinate structure he gives us a clue to the nature of transformation. What is the series of acts but an extension of symmetry in a situation of rapidly differentiating forms inside a unity of disturbed-but-persisting balances?[53] Along such lines of thought we can

[52] Just (b) 97-112. For Just himself, see Karpman. Just was penalised in his academic career for having been born a negro. 'One . . . wonders whether the choice of his life-work—the supreme importance of environment as against the statics of heredity and constitution—may also have been psychogenetically determined,' Karpman, 163. (See also Lillie (d) and R. M. May.)

[53] 'The organism may be said to behave as an intricate system of material processes, tending actively to maintain a complex pattern under constantly changing

bring together the physical, chemical, morphological aspects.[54]

Further, by refusing to take the cell in isolation and by insisting on relating cell-changes to the cell's environment, he shows the way towards a methodology which will embody scientifically Whitehead's insistence that the environment enters into every object. Such a methodology at last begins to apprehend the living unity of opposed processes.[55]

XX

Woodger in his *Biological Principles* examined at length the classical contradictions in biological theory, and thus helped to clear the ground for the resolutions that we find being made by men like Just. Needham thus puts in particularised form the questions which I have been asking above

> How far may wholes be made transparent, as by X-ray analysis of the crystalline and liquid arrangements which, as now known, play such an important part in the structure of the living body? How far can living structure be so explored without interference with its delicate organisation

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conditions,' Humphrey, '41 That need to 'maintain pattern' is (under changing conditions) a need to 'extend symmetry' Transformation is a crisis in this extension

'It is at this point we can introduce the mathematical relations of growth and pattern-tensions E g J Huxley (d) 'The growth-potential of the organ or region is distributed in the form of a growth-gradient, normally with a single high-point of growth-centre, from which the growth-intensity grades downwards in both directions (or in one, if the growth-centre be terminal), 102 'The prevalence of the logarithmic spiral form in nature is due to the fact that a uniform single growth-gradient, combined with the method of accretionary growth, *must* produce a structure in the form of a log spiral,' 163 The problem here is to find 'the biochemical basis for growth-centres and the physiological reasons for the graded distribution of growth-potential on either side of these centres,' 164 For rhythmical irregularities of growth scales, see 203 In general, D'Arcy Thomson and *Essays* presented to him Growth is basically rhythmical, and the final equilibrium is often approached by decreasing oscillations,' O W Richards, 194 'There can be no doubt that all animal chromosomes possess a spiral structure,' M J D White, 16 I give these references to emphasise that I am fully aware that the question of symmetry in structure, whether bilateral or radial, is never simple a complex set of strains and stresses, external and internal, must always be considered See e g , J Huxley (f) 136f, also note here at end of Ch 4B Order appears in the tangle of formulations in so far as the symmetry-principle is understood

'Just (c) Woodger is asking for work along these lines when he points out the limitations of the Mendelian analysis he asks for an adequate theory of cell-organisation, which will involve a theory of zygote structure The gene theory was worked out to explain 'the distribution of properties in Mendelian ratios among the members of interbreeding populations It was not devised to explain embryological data' To deal with embryological transformations the gene-theory must be included in a 'theory of cytoplasmic organisation,' (c) 118f Then 'taxonomy and morphology would be transformed'

(cf. the principle of indeterminacy)? What are the forces which hold morphological entities together, and how do they link up with forces at the molecular and sub-molecular level?[56]

"May we say in terms of unitary logic that at every moment of transformation there must be present some of the next phase as well as the preceding one—just as water freezes only because of the presence of certain crystalline formations, or refuses to become steam, however much heated, unless aided by *something of the next phase* (gas), some dust or speck, or tremor. Closed in an ideally clean kettle, water would not boil, but would heat up as a liquid until a tremor could explode it.[57] Bernal remarks:

When water boils normally, small bubbles of steam form in it and grow and come to the surface and burst. But if the bubbles are smaller than a certain size, instead of growing larger they grow smaller and disappear, and so, without the aid of something to make bubbles, water can never boil; for boiling it needs nuclei. The same is true of any violent change: no chain can break unless there is somewhere some flaw to start a minute crack.[58]

What breaks continuity is then, not a mere quantitative increase (which in itself can achieve nothing), but the presence of some factor which creates disequilibrium at a moment of intense strain.

Along such lines of analysis as this we may perhaps arrive at an understanding of (*a*) what is the continuity of form in process and (*b*) what happens at an integrative level, when some shock breaks the old balance and creates a simultaneous re-assertion of symmetry and a new centre of organisation—new rhythms of restriction and expansion. A cyclic movement in which evolutionary change is yet real.

Needham continues in the passage cited above:

For the emergent evolutionists, as is well known, emergence was as logical as well as an historical category. Not only had the various levels of complexity in the universe emerged in a historic sequence; but each was logically unpredictable from the basis of those lower than itself. Modern physical accounts of chemical events and chemical accounts of biological events, however, have rendered this point of view too simple. Chemical behaviour can be deduced from atomic physics, and biological behaviour from biochemistry. But the essential point is that by the time this has become possible, the physics and the chemistry have been completely transformed by the incorporation of wider factual ranges.

[56]Needham (a) 183.
[57]Dr. R. Silver brought this point to my notice.
[58]Bernal (b) 116.

And Polanyi thus states the way in which the levels are in fact being found to interpenetrate in concrete scientific problems:

> It seems to become clear that chemistry will never become predictable mathematically and that, in fact, we have rather to make mathematical physics—in a sense—more chemical. We have to discover a new set of empirical simplifications—corresponding to the nature of the chemical properties of matter—which will allow us to crystallise the general equations of atomic physics into a form readily applicable to chemical changes.[59]

XXI

In this discussion on Biology I have had to range far and cursorily. My purpose will have been served if I have suggested the extent to which mechanist attitudes still (in Whitehead's phrase) bifurcate science, even in a branch like Biology which deals with organic life. I have sought to show that the basic problems faced today by biologists can be solved only along the lines of unitary dialectics.[60]

A. NOTE ON THE RELATION OF ENVIRONMENT AND VARIATION

The Darwinian theory or Natural Selection is commonly taken to mean that the chance-multiplicities of organic variation beget certain structures which are more functionally adaptable to an environment than others, and that these survive while the others die out. The law under which the more adaptable organisms survive is that of Natural Selection. For those who take this attitude, genetics is felt to supply the internal mechanism whereby variations in structure occur.

I have already indicated the case against this idea of a genetical mechanism. But to complete the case we must go further and show that Selection itself is no matter of certain chance-variations simply fitting better in the jigsaw of the environment than others. For (as Sunder Lal Hora points out) in Darwinian terms Natural Selection 'is not a force, but a

[59] Polanyi, 510. See Needham (a) 184. Polanyi, it may be noted, is consciously anti-Marxist.

[60] Whyte formulates the main problems of unitary methodology: '1. The formulation of the conditions which determine "recognisable continuity". 2. The precise, but non-quantitative, formulation of the process of development in a form applicable to all systems, and of the conditions under which the development of one system may arrest the development of another. 3. As a special case of 2, the formulation of the process of the development of cellular organ-

method'.[61] Yet, in fact, we continually find biologists drawn to talk of it as a force.

With whatever initiative organisms may have been endowed at their origin, they have not escaped continuous moulding by their environment. (Borradaile, 375).

The role of natural selection is to keep the organism in direct adaptation to its environmental relations, so that as these latter change the organism changes with them. (Kerr, 193).

But Natural Selection, which is only a method, cannot mould or hold the organism. Either then these biologists are introducing unwarranted teleological terms into their statement of a mechanism, or they are denying that the mechanism provides an adequate explanation of what actually happens.

II

It may help to turn aside for a moment and consider some aspects of variation. Darwin laid emphasis on Divergence of Character to explain how the various species had survived and extended. Osborn in 1902 called this principle of structural diversification Adaptive Radiation, expressing—'the idea of differentiation of habit in several directions from a primitive type'. In 1926, however, Berg could write: 'Darwin represents evolution as a process of divergence of characters. As a matter of fact, predominative importance belongs to convergence of characters.' At least it could be claimed that a number of apparently homogeneous genera and families had been shown to be actually polyphyletic in origin. Further, Darwin's confident and large statement of Divergence had led to a general assumption that examples of divergence indicated distant relationship and those of convergence close affinity. This assumption went very much further than the facts of evolutionary relationship. Investigation seemed to show that convergence might occur among animals living under totally different conditions, and that animals living under identical conditions showed divergence. What, however, the cases did demonstrate was that convergence must be understood as coming from 'independent functional adaptation to similar ends'. As Hora says:

I wish to direct special attention to the phrase 'similar ends' for it may happen that animals living under different environments may have to

[61] Hora (a) 271. I owe much of the present note to Hora's statement.

respond in a similar fashion to a common factor in the habitats, and this would lead independently to 'functional adaptation to similar ends' resulting in the convergence of characters. For example, in the case of a strong swimming fish in stationary waters and of another fish which leads a more or less sedentary life in rushing torrents, the habitats of the two are totally dissimilar, yet in both cases the body is gracefully streamlined to offer less resistance to the current. . . . It is clear that in all cases where similar structures or habits have originated under apparently dissimilar conditions, a thorough study of the habitats and bionomics of the organisms would probably reveal that these adaptations fulfil similar ends.[62]

He goes on to emphasise that the simple statement which claims different structure-types for the same environment is quite superficial. What really happens is that when one sifts out the gradations of any single piece of environment, one finds that different animals occupy definite *niches* in the same habitat. Convergence of single characters is recognised in all taxonomic studies, but there seems also a principle of Communal Convergence. Willey raised the point:

How far this community of habitats leads to structural convergence is not clear, because the anatomical characters of the associated forms have not been worked out in sufficient details from this point of view.

Hora, Annandale, Cedric Dover and others have studied this problem of Communal Convergence in such matters as the fauna of mountain streams, the body-forms of brook-inhabiting animals, etc. Hora sums up.

It is clear from what I have stated above that divergence is the result of habitudinal segregation, or isolation, or some kind of 'Adaptive Radiation', and that divergence has to be attributed to differences in the environment. It may seem a paradox, but convergence is also the result of some kind of adaptive radiation, and the cause of this is the similarity of an individual factor or factors in the environment.[63]

Annandale showed in 1924 a specific type of divergence, in which organisms related in general structure exhibit, in the same or similar environment, different modifications in structure or form or instinct, and these modifications are correlated with the same element in the environment. He and Hora, dealing with mountain-stream fauna, showed that they moved upstream, step by step colonising the upper reaches. In the process the fauna provided ample illustration of the theory of the Change of

[62]Hora (a) 264f. Cf. the crisis concerning Homology (once loosely identified with morphological correspondence) : J. Huxley, in Beer, p. xii and (e) 395 : 'The Darwinian concept of Homology breaks down.'
[63]Hora, 270 (a) ; also (d).

Functions. 'The fact that structural modifications are produced through change of functions seems to have led to a great confusion in the study of animal adaptations.'

Along similar lines Dover has studied the bacteria and algae in hot springs, and decides that there is evidence 'for the belief that the fauna of hot springs is the result of the inheritance of physiological adaptations to a peculiar environment'. Dealing with certain blue-banded bees, he suggests that the forms 'have been evolved by the inheritance of small variations in some ways influenced by environmental factors'.[64] Annandale made the same suggestion with regard to some aquatic molluscs. Such theses have been attacked.[65] 'But they represent the main conclusions at which any intelligent student of the diversity of form in tropical life can arrive.'

III

I have given this brief summary of certain experimental work to bring out the point that the mechanist idea of environment as something to which fortunate chance-variations effectively fit themselves is showing increasing effects of strain. It seems hard to deny that the environment in some sense enters into the organism and plays its part in variation. Only by some such conclusion can we meet all the problems, such as those raised by exponents of neo-Lamarckism or of pre-adaptation. The unitary outlook must refuse to isolate organism from environment as a self-moving entity—and this applies at every phase of development, embryonic as much as adult. Between organism and environment there is a continuous field of chemical and electromagnetic changes. Organism and environment are different aspects of this single field.[66]

In this way we can reconstruct the theory of Selection to play its part in a unitary dialectical theory of Evolution. There is no such thing as a chance-variation in the mechanist sense, since every variation occurs as part of a total field of chemical and electromagnetic changes in which organism and environment mutually affect one another.[67] The environmental factor now

[64]Dover (c) 218 and (d) 2.
[65]Julian Huxley (a).
[66]Cf. 'The structure is only the appearance given by what seems at first to be a constant flow of specific material beginning and ending in the environment,' J. S. Haldane (b) 99.
[67]For instance in plant life, where the relations of cell and environment are simpler. 'Although cytological studies have thus revealed some physical basis of sex-differentiation, sex certainly is not determined merely by the presence

appears in a new light, and the problem of Communal Convergence is at last clear. We are not concerned with a point-to-point numerical addition of a number of chance-variations which all happen to fit into the external jigsaw; rather we see a *single continuous field* in which the total environment and all the affected and related organisms are brought dynamically together. The relation of function and structure is not one of abstract mathematical relations nor one of a chance-variation which begets a structure which happens to function in a successful way. It is intimate and dynamic, and is a property of the total field of movement. Within the total field the play of factors is of course large, and Selection does eliminate the less successful developments; but it is of the total field that we must henceforth think. Environment ceases to be an external and given factor, and enters into development of the Organism at all phases. The problem is to show the extent to which it does enter and the way in which the organism arises and develops in terms of the total situation of which the environment is a dynamic and dialectical part.[68] We must not undervalue the stabilising factors; but in order to analyse fully what happens in zygote transformation, we must not omit environment in its full dynamic sense.[69] And at the same time we must always have room in our theorising for chaos as well as order, for regression as well as successful adaptation.[70]

B. SYMMETRY AND UNITY OF PROCESS

I

No natural process is entirely efficient or successful. In doing its job, it always sets off residual processes or side reactions. For some time, or to some extent, these extra-processes can continue without upsetting the balances and relations on which

or absence of one or more odd chromosomes. Undoubtedly physiological factors of the whole environment act upon the physico-chemical organisation of the nucleus . . . ' Manghan, 55.

[68] This point is already accepted for specific analysis, e.g. Willmer, 288, 'The type of cell movement . . . must also be influenced by the environment, as indeed must all vital processes including (alas!) even the cell's specific metabolism.' And of cell-movements, 'This change in environment involves change of character,' 290. The problem is to find a method for estimating the total evolutionary effect of environment on organism, especially on zygote transformations.

[69] Lysenko raises afresh the whole problem of environment; his dominance comes from answering large problems of soviet agriculture; his work in theory is hard yet to evalue. At worst, he rushes in where mechanistic angels fear; at best, he re-orientates biology to new basic issues. (See later note, p. 7.)

[70] Whitehead's universal Prehension, exactly like Hegelian dialectics, ends in an interlocking mechanism which cannot explain the complexity of process.

the main process depends. If they are cyclic or auxiliary to the main process, they won't produce any important modification. But they may be antagonistic and cumulative, and then a different situation emerges. The residual processes

are bound in sufficient time and in the absence of external disturbances to accumulate to such an extent that the whole nature of the system and its activity are transformed. In the simplest possible case this is merely an explanation of the universally recurring oscillatory changes. Any process, once set going by an initial impulse, continues in the absence of external forces until, passing its equilibrium position as the result of its own momentum, it is brought to a stop and reversed.

But in more complicated cases instead of mere oscillatory back-and-forth movement as the type of cyclic change everywhere, we get as the result of the opposition and stopping of the primary activity a new and qualitatively different one.[71]

Bernal applies this idea to the formation of planets, the appearance of hydrosphere and atmosphere, and so on. It is an interesting and highly suggestive idea, and the terms in which we describe it must be carefully considered.

Bernal brings it under the Hegelian categories and defines it as a change of Quantity into Quality. Needham sees in it the formula of thesis, antithesis and synthesis.[72] But it seems to me that it is simpler and less abstract to generalise it in terms of the unity of process, symmetry and asymmetry. Then we can say that if a process, which is acting in a symmetrical or balanced way, holding its own intact, brings about as a result of its activity an internal asymmetry, the point is reached in time when the process has to make a total movement in which it reasserts symmetry and decreases asymmetry. In so doing it decisively changes its structure and achieves a new centre of organization, a new equilibrium.

This description seems to me to be very much more adequate to deal with living process than are terms borrowed from a dualistic philosophy, which assume a taking-apart of two sides of the process as if the process were a thing. Or which treat the complex issues of organisation as a mere increase in quantity and pay attention to quality only at the moment of transformation.

II

Recent work on muscle-contraction again provides us with a test for our terminology and methodological approach.

[71] Bernal (c) 104.
[72] Needham (d) 230.

In 1930, the particles of the chief protein of muscle—myosin, globulin—were found to be rod or fibril shaped, even in solation. X-ray analysis showed that myosin-contraction was like that of a fibre of keratin or cellulose, wool or cotton, a truly molecular contraction. A myosin-contraction, however, was reversible, while the contractions of the other fibres were not.

About the same time, the transference of energy from molecule to molecule through the breakdown of carbohydrate fuel was analysed. These cycles of phosphorylation, with accompanying transfer of phosphorus, led to the substance adenosinetriphosphate. From this substance energy passes direct to the muscle-fibril.

The problem remained; what is the relation between the chemical chain of reactions, which transferred energy, and the physical contractile activity of the fibrils? In terms of the abstract Hegelian categories, one could simply evade the problem by saying that the chemical and the physical activities are merely Opposites, and that the full contractile function was a synthesis of them.

In 1937, two scientists in Moscow were in search of the enzyme in muscle which breaks down adenosinetriphosphate and frees its energy. They found that this enzyme was myosin, the contractile protein itself. The effect of adenosinetriphosphate on myosin was investigated. That substance was found to bring about an immediate shortening of the rod-like myosin particles, followed by a slow lengthening as the phosphorus was freed from the adenosinetriphosphate by enzymic action.

That is, the presence of the substrate compels the action of the enzyme protein. The latter in the process changes its physical configuration. By doing so, it facilitates the disappearance of the substrate, and the configuration change reverses.

Probably this conception can be extended to explain many things in embryonic differentiation, but here the configuration change would have to be irreversible, just as the contraction of textile fibres is irreversible or nearly so.[73]

But are we to explain this discovery in Hegelian terms, or is it not more important to use process terms of organisation and symmetry? Then we can say that what seemed two quite different processes, one chemical and one physical, were found to be different aspects of a single process, and that the unity of

[73] Needham (d) 232. I take the account of myosin from Needham, and from Astbury, 322.

process exists as oscillatory symmetrical pattern. Here, in the process by which the organism preserves its stability in the midst of action, we touch the direct reassertion of symmetry. In development (e.g. in embryonic differentiation) the same process is at work, but not in an oscillation of reversible patterns. Then the pattern which expresses an extension of symmetry or stability must maintain itself, and the irreversible extension of structure goes on till a full equilibrium is reached.

III

The symmetrical patterns and movements of which I have been speaking must be conceived in terms of concrete rhythmical process. And this comment, I trust, will be kept in mind whenever later the term symmetry comes up—in relation, for instance, to psychic process in general or to artistic process in particular.

Turn, for instance, to the microscopic one-celled protozoans called Radiolarians. The different varieties are all very alike in structure and lead the same sort of swimming life. Their cell-substance, for a scaffolding support, secretes silicious particles, which are united in a definite arrangement. There is relatively a very small scope for utilitarian and protective purposes, and one would expect a general similarity. Yet every one of some 5,000 sorts of radiolarians builds its float-shell on a different rhythmical pattern. In the same way, the shells of mussels, snails, and so on, are constructed with extraordinary rhythmical variety and richness; and the primeval cuttlefish show the same endless wealth of rhythmical decorative forms.

All the vital processes have something of the kind about them. We do not speak of 'organic' life for nothing. Organic invariably signifies something worked out rhythmically, something unified. You clearly have occurrences with a rhythmic ring to them in the reproductive sequences of living beings, in heredity, in metabolism, in division of labour among the cells of the higher organism . . . You will also find the analogy in all inanimate permanent systems of the universe.[74]

One may trace this rhythm in the cell-phases of the primitive proteo-myxa and myxomycetes—flagellate, amoeboid, and encysted—with their analogy in animal organisation of anabolism, metabolism, and a balance or union between these two. Life appears

[74] Bölsche, 743 and 74

no longer as for the early Darwinians as so many machine-like combinations of innumerable indefinite variations externally selected from among yet more innumerable ones, nor even among a more limited number of ancestral possibilities, but as so many forms thrown from the rhythmic oscillations of the loom of life.

Each of these types or species, with its exquisite intricacy of detail and individuality of pattern, its marvellous correlation of organs, is thus a new unity created from within by its own interior play and balance of vegetative and reproductive forces, its inner predominances here of anabolisms and there of katabolisms.

Growth and arrest, giant and dwarf, rest and movement, sleep and waking, even female and male are contrasts all physiologically akin; and this single and simple rhythm of metabolisms, of passivities and activities, goes on into compound and re-compounding rhythms, like the figures of the pendulograph. The forms of life are thus distinct and definite, because harmoniously unified. They have a certain stability, great or small, yet they are anew transformable, like musical variations, like singing flames.[75]

The remarks in this section are intended only as suggestions. To substantiate their viewpoint, the generalisations must be tested and made concrete by an enormous amount of detailed work. Still, I believe that they can be helpful, even at this phase, and that they indicate, on the whole, the correct approach to the problem of living organisation.[76]

C. THERMODYNAMICS

I

I am only too aware that I should attempt at least as complete a discussion of the state of physics as of biology; but my weak-

[75] Geddes, (a) 244 and 85. There is something to be said for De Vries' idea of special pockets of plenty in the geological epochs when the crisis in nutrition brought about a specially high burst of rhythmic creative vitality. During such a period of rhythmic 'over-production' we may conceive the human brain gaining its rich differentiations.

[76] For the complex ways in which equilibrium or symmetry is maintained by the organism, see A. V. Hill, 'Conception of the Steady State', which discusses 'that which exists between the inside and the outside of the single living cell: that which obtains between the inside and the outside of the whole animal: the steady state at rest: the steady state during activity; the steady state of the cell, the individual, the tribe, the species ... The problem is, in a sense, a single one in all these cases—we are not dealing with a thermodynamic equilibrium at one end of the scale, with an organised factory at the other. Throughout we are involved, not with genuine equilibria, but with conditions maintained constant by delicate governors and by a continual expenditure of energy,' 78f. The derivation and use of that energy is, he thinks, the main biophysical problem: which includes the problem of what ends the steady state.

See Rashevsky (a) Ch. vi for the way in which 'some sufficiently asymmetri-

ness as a mathematician daunts me. However, there are a few things I can perhaps say. The crisis in mathematical physics, which centres round the Principle of Uncertainty or Indeterminacy, is essentially a crisis in method, an announcement that the limits of the method of quantitative measurement have in some sort been reached. Bohr regarded an electron as moving in a discrete series of orbits with characteristic periods. But when we try to measure the position and velocity of an electron we meet Heisenberg's Principle of Uncertainty. The reason lies in the fact that we can 'see' an electron only by illuminating it, and its dimensions are the shortest light-waves. The problem is insoluble, since it derives from the corpuscular structure of light. So, the more accurately the electron's position is found, the more uncertain are we as to its momentum; and vice versa.[77]

This crisis is bound up with the development of methods of Probability, of Statistical Laws.

> Every element of the universe exhibits at one and the same time a form of atomic and of statistical behaviour . . . Even such a simple matter as the measurement of a length shows this two-fold aspect. The measures obtained by a group of people express, in the diversity of the measures found, the relation of this group to the object measured. That is a statistical quality. On the other hand . . . we take the average, say, as the *approximation* to the 'true length. The latter then represents an atomic element. It is then regarded as a *property* of the object. The different measures . . . can then be regarded as a *property* of the group.[78]

The object-property is not to be set against the group-property as exact truth against subjective error. Each is a different aspect of a total situation from which human activity can no longer be abstracted. Our concept of object is becoming more concrete. The advent of the statistical method is not the intrusion of doubts and subjective factors into a sphere which should be rigorously objective. It betokens the breakdown of a false and limited concept of objectivity. So far from throwing out the notion of causality, so that we have to rescue that notion and reimpose it on the rebellious material, it lays on us the task

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cal distribution of the forces must be present' to induce internal movements of the cell called protoplasmic streamings. Work such as this shows how complex are the factors to be considered in any effort to determine what makes up organic equilibrium or symmetry in growth. But they are also confused by their empiric methodology, which fails to see consistently how the symmetry-reassertion operates as the basic law.

[77]Stebbing, 136f; Eddington, 223ff.

[78]Levy (a) 141f. 'Probability' represents in one sense the open socialisation of science.

of creating and grasping a fuller and more dialectical notion of causality.

In Einstein the Newtonian universe found its final extension which was also the statement of a breakdown. Relativity with its Space-Time showed the inability of a mechanist notion of Space to grapple with the problems of physics today; but it did not know how to grasp scientifically the reality of process, of time itself. Its objects were isolated objects moving in the complex web of relativity. The crisis which it inaugurated was a crisis in method, which can only be solved by a new scientific methodology, a unitary approach.

II

In fact the origins of the crisis go far back beyond Einstein and Planck, into the work of Gibbs and Helmholtz, into the new concepts developed by thermodynamics. Helmholtz, for instance, sought to fuse the basic formulae of mechanics, thermodynamics, electrodynamics and electro-magnetism. About the same time Helm and Natanson were striving towards general thermodynamics. W. J. Macquorn Rankine, the Scots physicist, as early as 1855 saw something of the needed unity, and called the new science that of Energetics.

In the classical view thermodynamics are only a particular application of dynamics. Changes of state were merely modifications in the characteristic elements of the hidden movements of the microscopic particles.

Against such attitudes Duhem, for instance, sought to define a method for grasping movement in the fullest sense, including not only change of place (local movement) but also all kinds of physical and chemical modification. It is illegitimate, he said, to reduce reality to pure quantity to make measurement possible. We must remain in the realm of sense.[79] 'The language of algebra permits us to reason as well concerning the various intensities of a quality as concerning the various magnitudes of a quantity.'[80] He wants a truly monistic physics, which will integrate movement, figure, and quality.[81]

[79]Duhem (a) 185f.

[80]Duhem (a) 193.

[81]Lowinger, Ch. x, objects to the monistic attitude, but ends ' . . . an indefeasible fact of the human situation—that the human Spirit is one and that the different activities in which it expresses itself must in the end arrive at the same conclusion.' Duhem, despite weaknesses, is aware that (in his own words) logical analysis is historical method, and that the unity of science utters the unity of process.

III

But despite these theoretical pointers very little attempt has been made to realise in practice this fuller type of physics. An important step, however, has been taken by Scott-Blair, an industrial physicist, who has sought for equations to express and integrate with normally measured aspects of a process those which normally are ascertainable only to our senses. Thus, he has seen that (in the case of a baker mixing dough, for instance) mechanical measurements of viscous and elastic aspects do not exhaust what the baker feels in testing the dough at any given moment of the process. To add together the dynamical aspects is not to produce a full picture of the facts; it is in the last resort only to set one limited equation next to another. But the baker's fingers integrate the sensations of viscosity and elasticity and many others inside a unified realisation closely connected with industrial process.

Scott-Blair set himself to define this unity mathematically. Such an attempt begins to achieve the monistic approach desired by Duhem and to introduce a reality of time, change, history, into the heart of the analytic method. In nature no process is precisely reversible, since any experience must affect the actual structure and internal balance of an object. The new physics must be a physics in which time is a real factor and the irreversibility of change or history is taken into account.[82]

IV

To complete this section I should attempt to formulate the problems of energy and entropy, and to suggest the lines on which a unified focus can be brought to bear on the thermodynamic contradictions, the increase in organisation set against the increase in entropy, the connection of work with the destruc-

[82] 'In sum, Duhem has constructed a Thermodynamics of irreversible phenomenon —viscosity, friction, hysteresis—when, until his time, irreversibility was envisaged under a very general form and almost exceptionally,' Jouguet, 40-9. Scott-Blair developed on the work of D. Katz. He seeks (a) to unite analytic and integrative viewpoints, and discusses (b) the relation of his findings to Gestalt., 'Complex entities useful for comparing the rheological properties of industrial materials are to be regarded psychologically as Gestalten (though not necessarily primary Gestalten). Physically, they may be described as quasi-properties or associated groups of quasi-properties. The quasi-property describes a process and not an equilibrium state and if the Newtonian time-scale is used, is defined by an intensity or quantity factor and one or more fractional numerical exponents which are quality factors', (c) 31f.

tion of mechanical energy. Such a unified focus is one of the great tasks facing us.

I shall, however, perforce content myself with a few observations. The basis of thermodynamics is the principle of the conservation of energy. The energy of a system is the sum of kinetic energy and the internal energy (usually stated as U). Now, U is the function of the variables $a, b \ldots n$ which define the system's state. Given two systems which form a new or single system, the function of the sum of the variables of each system is the potential of the mutual action of the two parts of the enveloping system. From a study of the elementary modification (with heat defined so that heat and work are equivalents) we move to applying the principle of Carnot and Clausius. Up to this point the equation is a simple identity; but now we get the equation of movement, in which actions of inertia and of viscosity are represented as elements. To determine a system's movement, we introduce a further relation expressing the way in which the system behaves from a calorific viewpoint.[83]

From a static symmetry we thus proceed to reality with its complex and entangled balances—the ceaseless attempt to reassert symmetry or to decrease asymmetry. According to the Second Law of Thermodynamics each movement, each loss of an old balance and achievement of a new, involves an increase in bound energy; every transformation of energy means a fall in the energy-level.

I have already touched on the problem of getting a single focus on the principle of entropy and the principle of evolutionary organisation. One of the keys must lie in the fuller understanding of the moment of transformation, which the Second Law considers only from the angle of mechanics. Approaches such as those of Duhem and Scott-Blair are leading us to a grasp which merges with the mechanical equations other equations based in history, in irreversible process, in the full organising situation.

Dantec tried to defeat the one-sided application of the Second Law to living process.[84] His method was neo-Lamarckian, but had interesting elements. Thus, in opposition to those who look on the crystal as the perfect model of an inert body, he points out that each crystal 'owes, at each instant, its particular form to an incessant activity which we can call vital morphogenic activity for an animal and crystalligenous

[83] Lowinger, 5.

[84] Dantec (c) 103f, 107. For analogies in the behaviour and morphology of crystals and organisms, see Rinné.

activity for a crystallised body'. That is, 'the crystal does not exist by itself, but results from an equilibrium established between what passes in its interior and what passes in the environment.'

Si l'on plonge dans ce liquide (en surfusion) un cristal du corps surfondu, on voit se propager immédiatement de proche en proche, dans le liquide, une activité cristalligene qui *part* du cristal préexistant . . .

Au-dessous de la température de fusion, il ne se produit pas de cristallisation spontanée; alors il faut un cristal pour amorcer le phénomène, qui se continue de proche en proche . . . tant que le dégagement de chaleur latente n'a pas fait remonter le niveau thermique jusqu'à la température de fusion.[85]

Passing from the crystal of glycerine to colloidal substances, he argues that:

Les seules formes d'énergie qui aient des chances de s'imposer sont celles qui peuvent amorcer 'des phénomènes qui continuent'; c'est-à-dire . . . des phénomènes qui produisent, plus qu'ils n'en consomment, de l'énergie particulière dont ils ont besoin pour se manifester.[86]

He argues that the category of mechanical energy can cover only one aspect of the process of transformation; and that, though a mechanically definable change occurs in living bodies at every moment of change, the full process involves other elements.[87] He goes on to consider vital energy, or the form in which transformation occurs in living substances.

He works out formulas to define stability and development. The entirety of an organism's activity in its environment at a given moment is represented by the formula (AxB). 'This formula is symmetrical; it concerns B as much as A; it comprehends the modifications wrought on B under A's influence as well as the modifications wrought in A under B's influence.' He goes on to try to devise a *Symmetrical Language*, which will escape the complicating distortions of everyday speech. He points out a colloidal body propagates round itself a rhythmic zone of action. If two come together with different rhythms, a dissonance or struggle begins; an unbalance or a symmetry. Each body remains on the defensive, until an action from out-

[85]Dantec (c) 110.
[86]Dantec (c) 120f. ; and (a).
[87]Behind him lie the many physicists who, following the advent of the problem of Entropy, turned effectively to the significance of stability, e.g. Mach. Whyte in (c) shows another climax in that development, with the argument leading to the formulation, 'More symmetrical states follow on less symmetrical states. (Mayer, Mach),' 140. Out of this physical formulation he moved in (a) to the full unitary definition.

side disarms one to the benefit of the other. 'Then the favoured colloid imposes its rhythm on the conquered; it assimilates it physically.' The physical assimilation consists then in a modification of colloidal rhythm.[88]

On these lines he attempts to show that we can best understand development and stability among organisms in terms of a continual reassertion of symmetry, in which thermic energy plays a complex part. There is an organising factor as well as a disorganising one in all movement; and the thermodynamical analysis cannot correctly limit itself to one side of process.[89]

Such an analysis only serves to clear some of the ground for the initial statement of what the problem is; but it is none the less useful. If the principle of entropy seems to show us a universe weighed down on the side of an increasing confusion and disorganisation, thermodynamics must recognise that the process of work is also a process of organisation which defeats confusion. The progressive stability of life, the continuing rhythmic decrease in asymmetry, Dantec rightly sees, cannot be simply reduced to the laws of Carnot.

V

In his essay *Evolution and Thermodynamics* Needham covers much the same ground as Dantec covered in 1910, and it cannot be said that the many opinions he cites have advanced the issues to any considerable extent.[90] Various thinkers have seen that the concept of thermodynamical order cannot cover the whole of reality.

> They [organisms] alone seem able to breast the great stream of apparently irreversible processes. These processes tear down, living things build up. While the rest of the world seems to move towards a dead level of uniformity, the living organism is evolving new substances and more and more intricate forms.[91]

> Side by side . . . with the second law of thermodynamics, in so far as it may be valid for large-scale systems—if it is so valid—there must exist a law for the evolution of novel forms of aggregated energy and the emergence of new qualities. A generalisation of this nature has not yet been made, but that a general rule of this type must exist is evident.[92]

[88] Dantec (c) 127, 146f. In (a) he first put out the notion of a Symmetrical Language for biology.

[89] One points in passing to two problems of entropy—Absolute zero, and the moment of Transformation.

[90] Needham (a) 207-232.

[91] G. N. Lewis (a) Ch. vi and viii ; p. 178.

[92] Levy (c) 203.

In the processes of metabolism no evidence has been forthcoming to show that organisms escape the Second Law: there is always a loss of free energy and organic compounds are broken down to CO_2 and water. And in work on evolution such generalisations as those of Dollo seem to show that the universe is always moving from less probable to more probable states—that entropy is increasing.

The principle of entropy is such that it can only deal with probabilities, and all that it says is that a state improbable in itself is followed on the average by a more probable state. Biologically interpreted, this principle points towards degeneration rather than improvement. The chaotic, the ordinary, and the common, is always more probable than the harmonious, the excellent, or the rare.[93]

Needham points out that thermodynamical order need not, however, be identified with evolutionary organisation.[94] D. L. Watson suggests that a classification based on morphological form and efficiency of function would give a very different picture from that of statistical mechanics.[95]

But it is not enough to argue that thermodynamical order and biological organisation are different aspects of reality. Such an argument has value only if it leads at once into the quest for the unitary outlook which brings the two aspects together on a higher level of comprehension. Somehow the two principles of increasing entropy and increasing organisation define the two basic aspects of the universe, the entwined aspects of symmetry and asymmetry, stability and chaos.

A first result of this conception is to make us throw over the limited morphological concept of evolution as a movement from the simple to the complex. The concept of that sort of progress is an illusion bred from a rationalist abstraction of one side of process. The movement out of chaos and the movement into chaos are simultaneous. The problem for unitary logic is to grasp the universe as this simultaneous symmetry and asymmetry.

VI

The problem then is to find the equation which will bring together the loss of free thermic energy and the liberation of

[93]Planck (a) 101.

[94]He argues that we must extend the concept of organisation down into non-living patterned aggregations and that since these need no metabolic upkeep, the theory that thermodynamical order and biological order are one must be rejected in favour of a wider generalization.

[95]Watson, 143.

organising energy.'[96] The crux is what happens at the moment of transformation and its new stabilised equilibrium as Dantec clearly saw. Thus, in the case of two vessels filled with gas at different temperatures and isolated from all other environment:

> With the passage of time they will come to exact thermal equilibrium. When this point is reached it will certainly not be possible to get any further work out of the system, but a pattern has now appeared where it was not before. The system has passed from asymmetry to symmetry.[97]

In this example and the range of analogies it opens up, we get a glimpse of the law of entropy as the law of an organising force. Entropy must be one aspect of *Time;* and the importance of the problem of Entropy is that for the first time it really does bring Time into the heart of scientific concepts. Work done by Gestalt Psychology (see later Ch. 6 and 7), I think, opens up the lines on which the basic equation of a unitary nature will bring together entropy and organisation under a law of decreasing asymmetry.

Perhaps we can get something of the needed focus on the limitations of the concept of entropy if we look at the way in which historically the concept arose. That concept is a direct offshoot of the problems of work and heat arising from the power-machine of early industrialism. A machine wears out, does less and less work efficiently, and has thus an increasing margin of failure. The inquiry into the efficiency of the machine and its work-capability led to the theorems in which the increase of bound-energy in all 'work done' is formulated. The formulations have remained tied to problems of heat; and that is certainly one reason for their insufficiency. We need a wider reach of definition which will include entropy with a number of other matters such as gravitation in a single focus.

Entropy is certainly an aspect of Time. In it Time appears at last concretely in scientific method. It is one aspect of the whole complex of delimiting or down-dragging factors without which organisation in matter would never even begin to appear. We need a fuller method, which will grasp the concept of *inner time* in every whole of movement and which will work towards the final reality of Time in the whole universe. Milne's two times will certainly be found to play an important part in the resolution of the problem. This is not a matter of relativity, but of

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[96] Needham (a) 228 ; Schrodinger (a) ; J. S. Haldane (c) ; Mayerhof, ii, 238.

[97] Dantec's example is not a good one, though I cite it because of the historical interest of his attempt to formulate the problem ; a better example would be of a heated body in an enclosed jar (which does work until equilibrium is reached).

a fully concrete grasping of the changes occurring inside a complex. Then entropy will be seen as an aspect of the forces making for stability and symmetry. But it clearly refers to only one aspect of process; else it is impossible to explain how organic life, vegetable or animal, ever developed. For life implies a counter-movement accumulating available energy.

> . . . the general tendency of life upon the earth is towards the accumulation of available energy in the form of chemical compounds of high calorific value. The process is restricted mainly by animal and bacterial life, and by the paucity on the earth of mineral nitrogenous compounds. But it is clear that on a lifeless planet the enormous store of available energy contained in the incident of solar radiation would be at once dissolved, whereas on one which is the seat of life the energy so received tends to be accumulated.[88]

But in fact this argument applies equally to inorganic matter, since by the principle of entropy alone we could never explain how its organisation ever came about. Form or process must be seen to involve always both a delimiting and an expanding aspect. Through the concept of entropy men have at last stumbled naïvely and confusedly on the measurement of real time (the concrete inner time of a complex); but the empirical one-track method of approach has prevented them from proceeding to the total comprehension.

[88] J. Johnstone, 219. At the present phase of knowledge it is onlyguesswork to say what the relation of entropy-increase and entropy-decrease would be in an hypothesis which succeeded in grasping *total concrete time*. My guess is that they would appear merely as opposed aspects of a single time-process.

CHAPTER FIVE

The Status of Anthropology

DESPITE A VAST amount of interesting material and valuable theorising, Anthropology in some ways has not yet reached the full status of a Science. Its methodology is still insecure; no clear guiding-lines of classification have been generally established. There is considerable truth in the remarks which A. R. Radcliffe-Brown made to the British Association in 1931: 'It is impossible to reconcile the different theories with one another, or even to discover principles of method about which there is general agreement.' And he added, 'Every school goes its own way, building up its own hypothetical structure, not attempting to seek out points on which agreement can be reached with others. The procedure is often that of disciples of a cult rather than that of students of a science.'

Variety of approach and freedom of hypothesis are essential to the healthy development of any science. But variety presupposes some common factor, or there is no basis of comparison. Unless a science has an agreed field of reference and a methodology by which different findings can be related, it ceases to be a science. It reveals itself as a confusion which requires the scientific discipline. Development is arrested in favour of a series of unconnected circles of argument.

To assert that Anthropology was in such a state of hopeless confusion would no doubt be to exaggerate; but there is more than enough of that sort of confusedness to warrant stringent criticism along the lines indicated by Radcliffe-Brown.

It is hard even to define the subject-matter of Anthropology. The first field was that of man's physical structure (Hundt in 1501), but in the 17th century it expanded to take in Psychology, 'the nature of the rationale soul'. By 1822, in the *British Encyclopedia*, it covered 'a discourse upon human nature' as well as 'that manner of expression by which the inspired writers attribute human parts and passion to God'. In 1876 Topinard described it as 'the branch of natural history which treats of man and the races of man'. The Concise Oxford Dictionary today

takes refuge in large generalities: 'Whole science of man: physiological and psychological science of man; study of man as an animal.'

But what is the 'natural history' of man distinct from his human history? and how can we study man 'as an animal' and not as a human animal, that is, as man? and what is the 'whole science of man' unless it is everything we know of man and his achievement, the whole of his history, social, cultural, economic and the rest of it?'

These definitions alternately limit anthropology to the simpler biological aspects of human development, the measurable aspects which are grouped under the headings of ethnology, craniology, morphology, and the like; or expand it amorphously to take in anything and everything of human history and prehistory.

If we look back over the last century we see various aspects of the 'whole science of man' splitting off as delimited fields of knowledge, where they become genuine sciences. One group of these fields is concerned with the biology of man in its zoological and palaeontological relations, comparative physiology, including hormones and blood-groups and so on. Another group, related, seeks to find criteria for ethnological analysis; a third, encouraged by the development of biological classification, tries to classify artefacts and begets archaeology and technology; and a fourth tackles language to find root-forms and the laws of change; and a fifth separates off the field of man's inner life and becomes psychology. History in general, of course, had long past separated out; and with Comte the specific term *Sociology* was born, to cover the inquiry into the motive forces of society.[1] What, then, is left?

Quite a lot, unless we are to expand the field of sociology until it embraces the 'whole science of man'. Clearly, a key-science is needed, which will bring together all those mentioned above, and which, in the action of bringing them together, will be concerned with defining, in their wholes and in their parts, the various cultural stages through which men have passed. Its central task we may then describe as the investigation into the nature and function of Culture—using that term in its broadest sense—and into the differentiation and interrelation of the varying cultures that make up human history.[2]

[1] Bendyshe, 356; A. C. Haddon, 1f; Casson.

[2] In practice *Sociology* has dealt with urban societies; *Anthropology*, with primitive or folk groups. I suggest *Sociology* be kept for socio-economic issues and *Anthropology* for Culture in general at all stages.

II

Anthropology can arise only when men are sufficiently self-conscious to see the basic contrasts between their own culture and the culture of other groups, and not so completely enclosed in the circle of their own group-values as to despise the values of the other groups as inferior or meaningless. The Greek Stoics often showed a true historical curiosity in discussing tribal forms, but they were too far in advance of their period and founded no anthropological school.[3] With the breakdown of the closed European bounds in the 16th century there emerged again the material basis for an anthropological outlook, which begins coming through in travellers' tales, records of Jesuit missionaries, and so on. But the first impact of the strange new worlds was to beget Utopian fiction and the explosive idea of a State of Nature. That idea, nourished by the Stoics, had never been lost from Roman Law; and now it revived with tremendous force, coming to a head in Rousseau.

Some of the travellers, e.g. Dapper in his *Accurate Description of African Regions* (published in 1668 at Amsterdam), were approaching a scientific attitude; and the mercantile expansion was leading to Collections, such as that of John Tradescant, from which the Ashmolean was derived. Tradescant, a gardener, visited Virginia and besides botanical specimens collected 'mechanick artificiall works in carvings, turnings, sowings and paintings', and 'warlike instruments'. His catalogue, dedicated to the College of Physicians, appeared in 1656. Out of the welter of change in the Cromwellian period, the antiquarian interests developed by men like Camden deepened into true anthropological inquiries in the work of John Aubrey.

But before the full problems could appear, a number of things had to happen. The ideas of Evolution and Organism, gathering force throughout the 18th century, had to burst out in the systems of Lamarck and Darwin, the discovery of the cell, protoplasm and the like. The many related sciences, such as those mentioned above, in which the concepts of evolution invaded the human sphere, had to crystallise out. The modern imperialist State had to extend its area of control; resulting in collections such as that of Scythian goldwork by Peter the Great and organised research such as that carried out by the French in Egypt during Napoleon's invasion. Industrial activi-

[3] Anthropological inquiries can be taken back to the Ionians—and Herodotus: Myres, 121-68; J. A. K. Thomson, 58ff.

ties such as canal cutting, deep mining, railway line construction, with their refinements of measuring mechanism, helped to found the sciences of geology and archaeology. Thus, it was William Smith, an engineer in charge of canal cutting, who produced the first coloured geological map (1815) and Boucher de Perthes founded prehistoric archaeology and human palaeontology by examination of industrial and military cuttings at Abbeville.

In addition to all this, history had to develop the realisation of human life as having passed through various different levels, basic changes in social organisation; and so to break up the dogma of a fixed Human Nature. And that development had to be fecundated from many angles of thought and feeling. Thus, the Romantic Movement of which the Rousseauesque return to Nature was one main strand, stimulated and organically created the sense of a past qualitatively different from the present—a past dimly but powerfully imaged in terms of Gothic raptures, Druidic 'nature-religion', Norse and Ossianic bards of the heroic clan-days; a fuller world of 'natural' freedom which had been lost.

This realisation of basic changes in history, however couched in fantasy-terms, was a necessary step to the appreciation of differences in personal and social organisation between Europeans and primitive peoples. Without Rousseau's daydream and the Ossianic fantasy there would never have been any genuine historical and anthropological attitudes. But, given these factors which made for the anthropological sense, what happened?

III

There were two fields on which the stimulus of the Romantic Movement could at once operate: those of Folklore and of Classical Studies. The romantics, especially in Germany, turned with intense interest to all survivals of folk-custom and folksong. It was felt that such survivals were close to pure 'nature' and revealed the 'free' man whom the money-world of industrialism was destroying. In Folklore spoke the nature-religion of the free clan.[4]

This attitude, however absurdly simplified, had its touch of truth, and led to collections of folk-customs and manuals of Northern Mythology. The folktale found an urban audience. The Brothers Grimm led the way and may thus be ranked as

[4] The term *folklore* itself was not coined till W. J. Thomas (*Athenaeum*, 22 Aug. 1846)

the founders of Anthropology. The next stage came in the work of Mannhardt and his followers, who explored the customs of the European peasantry for pre-christian fertility-cults. In 1866, Berlin pioneered with the Museum für Völkerkundt.

An allied line of approach had been affecting Greek and Latin studies. The Plutarchian ancient world, as imagined during the 17th and 18th centuries, began to break up and show folk-patterns. Masonic and Rosicrucian societies stirred a conviction of the continuity of religious and artistic symbol with their initiation ritual. Warburton saw the ancient Mysteries with new eyes; and Creuzer and Lobeck probed Greek myth for its inner meaning. Lobeck and C. O. Muller purged many of the crude naïveties and prepared the way for a more adequate analysis, where the work led by Mannhardt came fully into impact with Graeco-Latin studies. One of the less rewarding trails, however, appeared in the thesis of Max Muller and his school who sought for pure nature-allegories in myth and cult and got rid of all the real problems by treating mythology as a 'disease of language'.[1]

IV

The movement into industrialisation had begun tearing masses of peasantry from the soil and had stimulated the sense of a 'lost earth'. More and more material from the folk-levels of European culture was brought together. A parallel movement was expanding trade and imperialist spheres of influence, and bringing in information about barbarian or savage groups. Contempt for natives to a considerable extent inhibited the flow of information: but there were forces at work to counteract that contempt. At home the struggle for political democracy was intensifying; the 'class-struggle' had been discovered: a new attitude to divisions inside society was growing up. This new hard light on class-divisions meant the advent of a new critical sense, which, turned outwards beyond European society, meant a new sense of values in judging and understanding strange social systems, The interplay of forces, political, economic and cultural, is very entangled at this point; and the remarks made above must be taken only as hints towards

[1] Many other false simplifications might be quoted. Reduction to sun-worship is as old as the syncretism of the Roman Empire (e.g. Macrobius); Herbert Spencer plumped for ancestor-worship; Bastian had a theory of Elementary Ideas common to all men which find expression as Folk ideas, which appear in Geographical Provinces—a semi-mystical link between the Romantics and Jung's Archetypes and the schemes of culture-patterns culture-areas.

unravelling the complex of developments which made a new basic approach to the anthropological problem possible.[5a]

Amid the converging mass of new material two men made powerful efforts at synthesis and unification: Tylor and Morgan. Both had been strongly affected by Darwinian evolutionism, but there were considerable differences in the way they sought to apply the evolutionary principle.

Tylor attempted to sift the cultural evidence by rationalist criteria: to show that 'the history of mankind is part and parcel of the history of Nature' and that 'our thoughts, wills and actions accord with laws as definite as those which govern the motion of the waves, the combination of acids and bases, and the growth of plants and animals'. Such a statement claims too much and too little; and despite the enormously valuable nature of Tylor's effort to work out general categories of classification, the final result is to flatten out all real differences. For him psychological reactions are much the same all the world over in those matters common to all humans. It follows then that his scheme of evolution will be an intellectually conceived one of steady gradation from the irrational to the rational—with the rational standard being that of mid-Victorian England.

Tylor saw cultural development as proceeding from a dim irrational level—animism, a belief in pervasive spirit-forces—into differentiated religions and then on into the rationality of science. Similar conditions produce similar beliefs, and so (though the diffusion of culture at some points was not denied) no particular problem was felt in defining the sequence of beliefs and customs. The working-out might be highly complicated, but the movement was essentially simple—from the irrational to the rational, on obvious evolutionary lines.

He admits the possibilities of regression or stagnation; but that admission does not shake the simple rationalist values. His 'progression-theory of mankind' thus ends by explaining very little; its methodological barrenness was shown when he tried to work out a basis of 'tabulation and classification', in which the units of comparison were conceived as being of equivalent value. Human movement was taken as a mechanist matter of quantitative additions and subtractions, and the problem of real change was merely omitted.[6]

*T. Hodgkin, Quaker opponent of slavery, founded the Aborigines Protection Soc. (1837) in which two trends struggled (the missionary and the scientific outlooks). A split led him and others to form the Ethnological Soc. in 1843; further political divergences begot the Anthropological Soc. in 1863: Keith (b). [6] Cf. (a) 245. Cf. the atomistic attitude in Herbert Spencer 'The structure and actions throughout society are determined by the property of its units.'

Morgan, though also an evolutionist, approached the material from an opposite angle. He wanted above all to grasp the nature of the changes that human society had gone through. Behind him lay the work of Bachofen,[7] whose *Das Mutterrecht* (1861) had tried to show forms of father-descent as comparatively recent in history; the earlier form was that of mother-descent. Morgan seized on what was soundly based in Bachofen's thesis, and extended its historical application. Drawing on diverse material, he analysed ancient and primitive kin-systems, in which the unit, though varying, was always much wider than the patriarchal family; and he tried to work out the historical series revealed by custom and kin-terms. Roughly, his method was to start from a hypothetical state of promiscuity and to end with monogamy; the place of any kin-system within the series was determined by its degree of contraction from the hypothetical group-marriage.

The kin-systems in turn were set within a general framework based on economic modes, and divided into Savagery (three levels), Barbarism (three levels), and Civilised Society.

Tylor's main concern was with the inner world of man, despite his interest in customs and artefacts and institutions and ethnographical material: he sees man growing from an incorrect to a correct understanding of things. Morgan, despite his interest in the way in which social organisation affects character, is mainly concerned with finding the nodal points in organisational change. Tylor was an Englishman, in an England convinced of its social superiority and its clue to steady social progress—an England rapidly extending the areas over which it held sway and in which it had to deal with peoples at lower cultural levels. Morgan was an American, working at the moment when his fellow-countrymen were crucially transforming a continent, in which they had to grapple with the native races. There is inherent in Morgan's attitude a deep respect for the values of Red Indian culture as there is inherent in Tylor's a kindly contempt of the lower races which have yet to be guided, slowly, to full rationality.

The work of each man was of great value. Tylor's weakness was that it failed to recognise or understand the nature of basic change in history; Morgan's, that it failed to cover and control the vast amount of custom and myth which Tylor's had tentatively reduced to order. Tylor sought to grasp the whole man,

[7] Bachofen's whole idea of a *matriarchal* stage was mainly fantastic; but he had great value in opening up new lines (i.e., that of comparative jurisprudence).

but got him into a rationalist time-space where the wholeness evaporated; Morgan sought to grasp the basic pattern of change and to isolate primary factors, but omitted the complex interplay of personal and social factors in culture.

V

Tylor and Morgan together represent one crest of achievement. Despite weaknesses the evolutionary concept seems to be controlling the material; and all that is needed is to bring Morgan and Tylor together, to produce a fully adequate methodology. What in fact happened?

First of all, we must admit in many ways a steady advance—for instance, along the arc where Mannhardt, Lobeck and Tylor (e.g. in the pe on of his follower Andrew Lang) had much in common. A brilliant series of scholars have used the anthropological approach to illuminate ancient culture, e.g. Hartland, Frazer, Farnell, Cook, Cornford, Jane Harrison, George Thomson—the latter and Hartland alone trying to enlarge Morgan's analysis. Frazer, in his compilation, has worked in the full Tylorian sphere, and though such labours are extremely useful in their assemblage of material, the method is essentially scholastic, resulting to some extent (in Ruth Benedict's phrase) in 'a kind of mechanical Frankenstein's monster'.

And field-work went ahead with increasing energy and precision of method, e.g in America, Powell, Brinton, Boas. Mainly through Powell, who as geological surveyor had met and studied the Indians, the Bureau of American Ethnology was set up at Washington in 1879, and for the first time a State made serious investigation of the natives within its orbit.

In England, Pitt-Rivers, struck by the evolution of fire-arm forms, began his collection (now in the Science Museum, Oxford) in which a Tylorian kind of typology for artefacts in general was worked out.[8]

But all this sort of work, however necessary, could not of itself bring about the fusion of Tylor's and Morgan's work. A number of sectional revolts and heretical movements, denying the oversimplified evolutionary hypothesis, showed the lines of weaknesses, the points of strain and the difficulties requiring resolution.

[8] Akin was the work of Sir John Evans in the archaeological fields. Cf. also the efforts (Grabner, Menghin) to define culture-cycles on the typology of artefacts. These go back to the work of Thomsen in Denmark (c. 1812); the literary tradition of Stone, Bronze, Iron Ages, plus geological classifications, exerted strong influence. Such approaches lead to a simple theory that 'the motive force of culture is technological,' L. A. White (b)

Protests against lack of fullness in analysis multiplied. Wundt had already emphasised the rich complexity of the relation of individual and society, though he opposed the group-soul mysticism of thinkers like Lazarus and Steinthal. But it was the French school led by Durkheim that led the main revolt against Tylorian rationalism. They charged English anthropologists in general with having imported the social values of mid-Victorian England into primitive groups. The primitive mentality, they said, was not to be understood at all in terms of mid-Victorian categories. It had totally different values and forms, which were based in the intense group-solidarity. The psychic processes of the primitive had as their expression what might be termed collective representations. Lévy-Bruhl went so far as to assert that the primitive existed in a pre-logical world dominated by the law of participation and untouched by the law of contradiction.[9]

This school of *L'Année Sociologique* overstated their case, and did not notice the great diversity as well as likeness among primitive groups. But their reaction against Tylorism had many positive results. It made possible a full understanding of the central part played by ritual in primitive life and the way that ritual begot symbols or 'collective representations' of the utmost importance for religion and art—indeed, also for science.

These lines of approach proved most valuable for the classical scholars mentioned above; and led to such studies as that of van Gennep, *Les Rites de Passage*. Van Gennep saw the ritual moments as expressions of the crises in the life of individual and group involving separation from a past level or condition, a transition or passage, and an admission or integration into a new level or condition. But though such analysis gave considerable insight into the dynamic forces and forms at work in societies, it did not develop any general methodology capable of supplanting the Tylorian schemata which it corroded.

Several attempts have been made to fill the gap. Three main lines can be picked out: the Diffusionist, the Functional and the Psycho-analytic.

VI

I shall begin with the Psycho-analytic, since it most easily links on with the work of the French school. Freud and some

[9] Theory and practice in psychology have reacted considerably on anthrop. methods. In the Cambridge Anthrop. Exped. to the Torres Straits the first trained psychologists were taken into fieldwork. The Functionalists (e.g. Benedict) admit debts to Gestalt, to thinkers like W. Stern and W. D. Dilthey, etc.

of his followers, such as Roheim, have tried to use the psycho-analytic method to explain the driving force in individual and society at all levels. Since Freud has found the Oedipus Complex central in the psychic life of men of today in European culture, he looks for it everywhere. He accepts the hypothesis of a primitive group in which the Father monopolises the women until the Sons rise up and kill him. This event leaves an indelible mark of guilt on men's minds; and out of the accompanying repressions and sublimations derives the whole motive force of human history.

Roheim has managed to make some effective points in dealing with Australian totemism, because the Australian tribal systems are so largely dominated by the initiation-rite of separation from the Mother, with much repressed aggressiveness towards the Father. But the hopeless one-sidedness of the theory appears when any effort is made to apply it to cultural forms in their endless variety and complex discords and harmonies. Freud is merely projecting into history a fantasy of the castration-complex, which sometimes coincides with the material and sometimes does not. On the other hand, Jung, protesting in the name of the integrative processes of the psyche, points out the organic nature of symbol (in religion and art); but instead of trying to relate symbol to the reality of historical process, he abstracts it into a timeless collective-unconscious, where history is swallowed up.[10]

VII

The Functionalists sought to fill in the picture which Freud and Jung in different ways agreed in reducing to an abstraction. For some time field-workers had been feeling towards a method which related organically the various aspects of a culture. Thus, Boas in America had introduced the idea of a controlling pattern in group-activity, and worked by dividing North America into culture-areas and by probing the psychology of cultural impacts, exchanges, and assimilations. Rivers had tried, in dealing with his Melanesians, to relate them to surrounding cultures by tracing out functional intercourse in the elements concerned.

Malinowski went further and during the 'twenties sought to find a way of doing justice to the richly involved activities and motivations of a real society. The idea of a culture as a living whole grew clearer; and each aspect is seen as getting its meaning

[10] See Bartlett (a) esp. Ch. iii.

and emphasis from its functional relation to that whole. He put his method into action in his work on the Trobrianders, but made the mistake of generalising the Trobriand traits 'as valid for the primitive world instead of recognising the Trobriand configuration as one of many observed types'.

That criticism was made by Ruth Benedict, who, with Margaret Mead, was one of those who sought to make a thorough application of the functionalist principles. This application can to a high degree provide an exciting account of a particular culture, selecting its basic attitudes and showing how they pervade the whole of social and personal life. But it ends in a complete relativism. There is no culture, only cultures; and if there is no culture, there is no history. Each group is internally unified and functioning in terms of that unity, but we cannot transplant the terms.

Thus, Benedict says, 'We should not run into the mistake of thinking that "marriage" can be understood in two cases by the same set of ideas. We must allow for the different components which have been built up into the resulting trait.'[11] Carry this attitude to its logical conclusion and we should have to find a different origin for 'marriage' in each culture. Or if we admit a common origin, we have to posit that origin at some mysterious past moment, after which 'marriage' diverged into different functions.

The Functional method thus proves to have no means of handling continuity and real relationship between cultural levels. "Culture" becomes a magic term for explaining culture; and there is no way of finding a real series or of relating a culture to the stream of history. Each culture has its history, but there is no history.

VIII

The Diffusionists step into the breaches and gallantly set out to provide the connecting links which the psychologists ignored by asserting all groups have had the same motivations and the functionalists ignored, by saying that all groups have had different motivations.

Diffusionist theories go far back. For instance, in the 18th century the first attempts to reformulate history hovered round fantasies from the Old Testament in which Egypt was often given a mystical importance. In the 19th century an

[11] Benedict, 50.

attempt was made to employ quantitative methods, e.g. Frobenius with his Geographical Statistical system, to establish interrelations. Graebner went still further and mapped out the distributions of culture-articles to find objective ways of showing historical connections and culture-waves. Gerland had earlier argued for a cultural centre from which various elements were carried over the world.

But what was lacking was an hypothesis which would use the kind of imaginative insight piled up by Durkheim, Hubert and Mauss, to penetrate inside the mass of field-material and find a unifying principle at work. The school of Elliot Smith boldly sought to supply this hypothesis. Smith, investigating mummification while Professor of Anatomy at Cairo, was led to study Egyptian funerary customs and was struck by certain aspects which suggested a world-wide diffusion derived from Egypt. He argued that a happy set of favourable accidents started civilisation off in Egypt, and agriculture and its associated rituals spread thence over the world. In 1915 his *Migration of Culture* stated his position, which was powerfully elaborated by W. J. Perry in *Children of the Sun* (1923) and received support from so fine a field-worker as Rivers.

The Heliolithic Culture-Complex, later called the Archaic Culture, is explained as having spread through agents carrying the essential elements of Egyptian culture in quest of life-giving substances such as gold or pearls. The megalithic expansion was one of their works.

The statement by Perry raised a number of basic problems; it brought together a great deal of facts in ways which showed there must be some sort of unifying hypothesis, even if it failed itself to find the fully satisfying one. Thus, it pointed out the existence of social forms, to which it gave the name Dual Organisations, all over the world at tribal levels. It explained these forms as imitations of the Double State of Egypt, the Two Lands. The explanation breaks down, and what is shown is the fact that the Egyptian Double State is one instance of the world-wide complex. But in the process the existence of that complex and the important problems its existence raises have been brought to light.

Its one-sided methodology meant that Diffusionism could not prevail; it left unexplained far more problems than it even tried to explain. But there was one great virtue in the attempt it made—a genuine imaginative penetration into the modes of primitive thought and action, which was able to make a bold grasp at unifying a vast number of important facts that to a

large extent had not previously been grouped together. The approach to anthropology could never be the same again.

IX

No sooner did the Smith Diffusionists muster their forces than the ground was cut from under their feet, not by any theoretical disproof, but by the fact that archaeological finds no longer gave any plausibility to Egypt's claim to a unique position. From the 'twenties on, Sumeria was clearly revealed as the great initiating centre of urban and agricultural developments. Diffusionism has therefore reappeared in a modified form, which, though to some extent exploring real relationships in the cultural sphere, lacks the noble sweep of Elliot Smith's and Perry's concepts, and which, wearing thin, exposes the final consequences of such a doctrine.

The new Diffusionism can be divided into three subsections. First, there is the blunt statement in, say, Hocart's *Kingship*, which seeks to reduce all the basic primitive rituals to the status of imitations of coronation ritual. The Kingship is thus set up as the source of all cultural values.

Secondly, there is the more discreet work of S. H. Hooke and his group, who drop Egypt as the original culture-centre and turn to Sumeria and its early kingship. Since so much of ancient culture is in fact genetically related to early Sumerian developments, there is much that is of interest in this group's expositions; but in the last resort they are advocating the Hocart thesis.

Thirdly, there is the work of scholars like Raglan and W. R. Halliday, who, reacting against sentimental ideas about the folk and the communal origins of art, deny the folk or the tribal group any real part in the creation of culture at all. In practice their work often ably demolishes false simplifications and shows that the process of culture may involve the most devious of diffused impulses from the higher levels. But they deny that there is any counter flow, from below, and attribute all real originating power to the higher levels. Thus, Halliday says, 'the great bulk of folk literature, folksong, and folk-practice is composed, indeed, of survivals, but they are in the main survivals of the literature and learning of the higher strata of society in previous generations rather than creations of the folk.' C. B. Lewis concludes, 'The folk has neither part for nor lot in the making of folklore.' Raglan asserts that magic 'is really the decayed or fossilised remains of ancient religion';

it was 'once connected with the highest civilisation of the day'.[12]

Thus, all three lines lead back to the Sumerian origins—in which they teach much truth. But they do it by a single-track approach in which the living complexity, the fusion of opposed elements, characteristic of a real culture, is sacrificed to an abstraction of culture. Back in the Sumerian origins, they halt at the foot of the kingship and sink in reverence; for what remains on the other side but God? Their methodology implies an ultimate source in divine revelations.[13]

The Hooke group in fact is directly concerned with Christian apologetics. And the case of John Layard, who did brilliant field-work in Malekula, reveals better than any analysis what the Hocart method leads to. In *The Lady of the Hare* (1944) Layard retreats entirely from history and uses the Jungian method to find the key to revelation, to the intuitive basis of religious symbols in the unconscious, which is considered to have contact with supernatural sources.

X

We began, in the Romantic Movement, with a radiant faith in folk-material as holding the key to undefiled cultural origins; and we end, among the Hocartians, with the thesis that folk-culture is degenerate or derelict upper-culture. Has Anthropology merely gone through a complicated cycle in order to deny the blithe premises on which it began?

Is history the actualisation of the Oedipus Complex? or is it the confused scene from which emerge the timeless symbols of the collective unconscious? Is it a concatenation of distinct cultural wholes, which may open to receive influences from without but which then close up into self-contained functional wholes? or is it an unfolding of certain motives laid down mysteriously at the dawn of civilisation, from which culture continually declines? or is it a steady progress of rationality broadening down from precedent to precedent?

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[12] Halliday (a) 72 and (b) 117—Cf. Gaster, 217f; Lewis; Raglan, preface to (a). Cf. A. Lang and W. Schmidt (a and b) seeking to prove worship of a Supreme Being prior to magic totemism, nature-worship, etc. For the Diffusionist fight against Evolution: L. A. White (a); Childe (a).

[13] The Smith-Perry group had a sort of Utopian background, a belief in an original pacific happy state; but they did not really try to explain how this broke up, or the relation of the 'kingship' to the advent of war, etc. As the situation narrows down in the second phase of Diffusionism, the generous elements go, and the dogmatic elevation of the kingship or of revelation dominates.

None of these lines of attack on the problem can succeed in answering more than a few of the many questions raised by the full facts. We are still far from finding a methodology capable of dealing with any culture, primitive or urban; of separating out its primary elements and of characterising the culture as a whole; of showing clearly the stage from which it has grown and the stage to which it is moving.

Let us look back at Tylor and Morgan; at the moment when large-scale syntheses were attempted. I said in connection with those attempts that it seemed a convergence between the two lines of approach might yield the required solution. But a convergence of that sort would mean much more than a mere fitting together of the methods and findings of Tylor and Morgan. The weaknesses and inadequacies of Tylor's scheme provoked the attacks of Durkheim; and the psychological theories of Freud and Jung were unable to bridge the gap between Durkheim's premises and Tylor's. The weaknesses and rigidities of Morgan's method led to the development of the Functional School, with their abstraction of the cultural whole as a kind of psychic choice on the part of the members of a group. The Diffusionists alone have offered a scheme which tries seriously to bring together the revelations of how primitive mentality has worked at various stages, and the ascertained facts of cultural grouping. They showed a number of unrealised connections, but their one-sided argument has foundered in the stormy waters of yet more unexplained connections.

All these schools, then, show some of the basic lacks in Tylor and Morgan. Yet both Tylor and Morgan had their virtues. Human history does include a movement into greater rationality as part of its conquest of nature; but the story of the movement is highly complex, and the relations of rationality and irrationality can only be properly understood within the living whole of human development. And Morgan's scheme of history as a continual differentiation of class or other groups inside the general group has a fundamental truth about it, which enables us to grasp a rough and simplified pattern of historical movement. This aspect of Morgan's thought has powerfully affected the thinking of prehistorians and anthropologists, but has often been resisted for the same reasons as Marx's thought has been.

'The opponents of Morgan', said Rivers, 'have made no attempt to distinguish between different parts of his scheme, but, having shown that certain of its features are unsatisfactory, they have condemned the whole'[14] Though many of Morgan's

[14]Rivers (a), (b) 309. (c). Besides Rivers, Haddon, Hartland, Cunow, Reclus and

points were incorrect and though his whole system was often too schematic and naïve, much of the opposition was provoked by what was sound. His most severe American critic, R. H. Lowie, admits :

> In social organisation and especially kinship terms, Morgan remains a towering figure. His work has been revised and amplified, but it cannot be ignored . . . The distinction of Morgan is not simply that he heaped up vast stores of information on a subject of theoretical import, but that he immersed himself in this welter of fact and came to grips with it.[15]

Morgan's belief that kinship terms corresponded to a social reality and could be related to matrilineal forms of descent in primitive stages, has been thoroughly vindicated. Other valuable formulations of his included the contention that different elements of culture change at uneven tempos. But his schema intended to show how a hypothetical Group-Marriage contracted step by step into monogamy is too neat by far; it is now seen as bearing no relation to the facts. Above all, the discovery of totemic organisation has put a new focus on the problem; and until Totem and Tabu are fully understood, a main key to the development of primitive man is missing. But the lack of an adequate methodology has made the solution of Totemism impossible, and we are back where we started, in quest of that methodology.

XI

How then can we bring together all that is valuable in the work done since 1850, not to beget an abstract synthesis, but to create an instrument capable of grasping the fullness of factors in historical movement without losing a sense of the structure? The kind of evolutionary scheme which Morgan traced is certainly an essential part of the patterning; but its effort of simplification, is one which has to be checked most carefully with every bit of available evidence, both from the fields of anthropology and archaeology.

Letournau have acknowledged Morgan's influence. Engels's (e) was a valiant effort to build from Morgan's start, still important for its method and the problems it raises.

[15] See B. J. Stern, 174f. The problems raised by Morgan are not simply ones of his errors (e.g. that racial affinity explains tribal resemblances in kinship systems) or oversimplifications (e.g. societas, or kin-group, against civitas, or group not primarily based on kin). They lie deeper in methodology. The solution is not in works like that of Hobhouse, Wheeler, Ginsberg (however valuably it clarifies certain aspects of classification) or of Goldenweiser (though it is valuable to discuss issues of parallelism and convergence in a general way—cf. R. B. Dixon, or Chapple and Coon, on the need to show how several variables change together and affect one another in changing).

Morgan asserts that, 'Progress has been found to be substantially the same in kind in tribes and nations inhabiting different and even disconnected continents, while in the same status, with deviations from uniformity in particular instances produced by special causes.' He considers that 'the experience of mankind has run in nearly uniform channels', and that 'a thorough study of each successive stratum will develop whatever is special in its culture and characteristics and yield a definite conception of the whole, in their differences and in their relations.'

Such generalisations may be accepted, and yet we may think that their usefulness is limited. The stages in history can be defined in so broad a way that 'deviations from uniformity in particular instances produced by special causes' may be herded away and explained incorrectly out of sight. Then, what began as a justified preliminary simplification turns into a metaphysic of history, and the real connections are lost. It is correct to say of Morgan that he

> did not conceive of his function as that of a cultural historian who must trace specific historical events in their temporal reference in any one place. He was primarily concerned with classifying *types* of societies on the basis of certain distinguishing characteristics that peoples generally shared in common at specific levels of culture, and to note the sequences in the development of those types.[16]

But unless such a generalising method is continually subtmitted to criticism in terms of new facts and theories, it mustinevitably become obstructive and flatten out the real contours of life.

The problem then is to relate the evolutionary schemata of Morgan to all that is valid in the archaeological and anthropological work since his day. That means we must add to the schema of productive stages an understanding of the way in which cultural factors in general work at those stages, and we must relate the abstract schema to the picture of actual history revealed by archaeology and other sources. We must see individual cultures as functional unities without cutting them away from the continually-refined schema. That is, we cannot simply abstract the modes of production and the resulting social relationships as basic irreducible elements in human history. Those modes and relationships must be seen in all

[16]Stern, 175. Among qualifications which Morgan did make was an agreement that cultural borrowings can disturb the internal sequence of a group, and that 'it is by no means easy to conceive of two peoples in disconnected areas living in conditions precisely similar'.

possible distinctness, but not abstracted from the other levels and forms of cultural activity, which are equally essential to human existence or development. To deal with the totality in an adequate way needs a much more subtle instrument, a unitary methodology.

The fact that the Functionalists and the Diffusionists have already reached blind-alleys, is enough to show that the revolt against what was one-sided and over-generalised in Tylor and Morgan has come to the limit of its usefulness. What is now needed is the integration of all the available material; and that means a unitary methodology. Anthropology will then be found, I think, the Science of Culture: the science which deals with the nature and function of culture, and with the totality of elements which come together in the movements, the transformations, of history.[17]

A. ANTHROPOLOGICAL ELEMENTS IN CONTEMPORARY POETRY AND ART

I

I ended the last chapter by discussing the need of a fuller approach to the issues of Anthropology. It is of interest to note, as a complementary issue, the way in which Anthropology has helped poets and artists and musicians of the present and last generation towards a fuller understanding of their arts and of the relation between art and life.

In a sense, the story can be taken indefinitely back, as far as the Greeks. For the concept Nature, as soon as it detached itself as something to be set over against existing society, directed attention in some sort to tribal society and to that society's glamourised image, the Golden Age; and so the idea of Nature played a vital part in helping thinkers or artists to

[17]The deep sense of the unity of process which we found in Darwin and Wallace brought Morgan too to the realisation that the living potentialities of his world led to a more highly socialised form of living. 'The time will come . . . when human intelligence will rise to the mastery over property, and define the relations of the state to the property it protects, as well as to the obligations and the limits of the right of its owners. The interests of society are paramount to individual interests, which must be brought into just and harmonious relation. . . . The dissolution of society bids fair to become the termination of a career of which property is the end and aim; because such a career contains the elements of self-destruction. Democracy in government, brotherhood in society, equality in rights and privileges, and universal education, foreshadow the next higher plane of society to which experience, intelligence and knowledge are steadily tending.' Morgan at close of (a

find a foothold outside existing society, in a field of free potentiality, from which to judge existing forms and to project an imagination of a fuller life.

In the 18th century that conflict of Nature and Existing Society in men's minds reached a high point of tension, and provided one of the spiritual bases making the French Revolution possible. Then to a considerable extent the fantasy of a Natural Good which men had lost was dissipated in the false glare of Victorian Optimism. The dissident poets, such as the Symbolistes, tended to take up magical attitudes, opposing an intuition of deeper transformations to the prevailing mechanisms of successful thought. In Rimbaud the alchemic intuition of 'organic correspondences' passed over into the Return to Nature, when he turned from Europe to Africa. Rimbaud is of course a very much more complex person in his make-up than a Rousseauite of the preceding century; and the entangled mixture of revulsion, guilt, contempt, hatred and aspiration which turned him into a trader cannot be reduced to the Rousseau-formula. But in a way he was turning from a poetic magic which he felt worked-out and contaminated to a world where the sort of problems that had destroyed him did not yet exist. Then somehow he, or those coming after, might return into the area of European consciousness in safety:

> Alas, to what end are these comings and goings, and these fatigues and adventures among strange races, and these languages with which one fills the memory, and these nameless labours, if I cannot one day, in a few years time, rest in a place which almost pleases me and find a family and have at least a son whom I shall pass the rest of my life in bringing up in my own notions, adorning and arming him with the most complete education that one can attain in this age and whom I shall see a renowned engineer, a man rich and powerful through *science*.[18]

It is Rimbaud who underlines the word Science.

II

L'orientalisme français (represented in a whole gallery of the Musée de la France d'Outre Mer in Paris) turned into the flight of Gauguin (and of Pechstein) for the South Seas; and soon a flood of Negro or other primitive art was being examined and imitated by European artists. It would be incorrect, of course, to say that an artist like Picasso imitated Negro or Polynesian works; but it is equally incorrect to say merely

[18] E. Rickward, 96f.

that 'he studied the significance of Negro and Polynesian sculpture for plastic form'.[19] The problem is rather why at that given time and place some of the forms which Picasso felt creatively driven to define had affinities with the primitive sculptures, so that the contemplation of the latter facilitated his expression.

That is a difficult and involved question, which I do not wish to discuss fully here. But one point must be brought out: Picasso's 'return' to primitive elements in art is bound up with his attempt to apprehend structural (geometric) elements of form and movement. The abstraction, which represents the intrusion of the scientific generalisation and dissection into art, shows an accord *with* various aspects of modern science. The primitive image, which represents the attempt to define the organic bases of form in all possible simplicity, may be linked with the revolt *against* various aspects of modern science. But both meet in Picasso's personal problem; the analytic and the organic approaches are merged in the creative image. Picasso is trying simultaneously to grapple with the analytic dissociative forces of our day and with the organic intuitions. Out of the two aspects unified in his creative activity, he seeks to express certain new potentialities of integration, which will overcome the present contradictions and dualisms.

III

This bringing-together of primitive and highly-sophisticated (consciously abstract) elements in Picasso's work provides us with a key-pattern which can be traced in a great deal of the most significant art, music, and poetry of our day. To show how the union of images and ideas and forms drawn partly from science and partly from anthropological material has fecundated our minds would need another work. But this brief pointer is relevant to our general quest in this book. For in the aesthetic use of material from anthropology we see something of the unitary trend which is emerging in all really creative work of our period, whatever its superficial ideology. Joyce's attempt to assemble the mass of flittering associative material (which makes up the stream of consciousness and its unconscious groundswell) ends in a vast mythopoeic attempt to penetrate to the symbols and structure of the psyche. The simple use of folk-music for material by musicians turns into the subtle comprehension of primitive elements in terms of

[19] E. A. Parr, ii. 257.

highly-integrated form by Bartok or (in a different way) by Sibelius. And so on.

To overcome the deadening and disintegrative forces of an industrialism based on mechanist science, the artist or poet or musician has to make this extended effort of sympathy and unification. He must go back to pre-capitalist levels and yet forward along the lines suggested by the advance-science of his day. He must pick up the lost tradition of an organic art, and yet be true to all that is positive and unitary in scientific movement. The anthropological element we have been discussing is simply a sign of the creative quest for organic elements of form in the past, which one way or another are relevant to his fight for a new balance.[20] Only thus can the fullness of a living tradition be concretely vindicated.

The importance of developing an adequate methodology for anthropology will then be clear. By such a methodology we can make the cultural material of pre-capitalist levels once more fully comprehensible. Whereas now only a few artists with particularly penetrating vision can turn effectively to that past, anthropology with the unitary methodology I have outlined would bring all the primitive material within anyone's reach. Only such an understanding of the organic elements in pre-capitalist art can fully defeat the deadening influences which have been brought so long to bear on the peoples in industrialised countries. Only that can make the whole human tradition a vital part of common experience.[21]

[20] "From a study of the Negro and the Bushman, we are led to an understanding of art in its most elementary form, and the elementary is always the most vital" Herbert Read (a) 39f. Vital in importance for those whom the dissociations of class-society have cut away from elementary bases of satisfaction. For the general significance of the advent of the genetic approach and the new interest in primitive art, H. Read (b).

[21] A poet like T. S. Eliot has made rich use of Tradition in this full (anthropological) sense in his poetry; but in his critical work he abstracts his own poetic activity from the fullness of history and devises an idealist theory of tradition which empties out all the concrete meaning.

their working-out they may throw light on various neglected aspects of aesthetics. Thus, we may reject Croce's Intuition, but we cannot deny that 'the apprehension of beauty is *some* sort of immediate awareness', and under the intuition-theory Croce is able to say many excellent things about the unity of apperception.[8]

Similarly, while denying Bell's formulation, we must admit that the problem of Form lies at the root of the problem of Art. Change one note of a Beethoven Quartet, and you have modified its meaning.

The Form is the work of art. But we cannot leave the matter at that statement; we must go on to ask what Form is. As Abercrombie says, 'The significance which form carries is the significance it gives to the matter it forms.' Not that we can speak of 'form' as an agent which operates on an inert 'matter', but Abercrombie himself modifies his account:

> Form is not a final imposition on the matter of art, finishing it off and compelling it into a given mould; the inevitable establishment of its form is inherent throughout the whole process of a work of art's existence. And at the completion of its existence the final resultant and inclusive impression of all the contributory impressions will be an impress of unity. . . . It is by Form that this matter, whatever it be, is accepted as unity. . . What art gives is given as an instance of a world of unquestioned order, measure, government; a world in which experience occurs with perfect security, knowing that the firm correlation of its process can never be dislocated by chance.[9]

That is still a little stiffly, mechanically phrased; but it shows how much surer the ground becomes once the critic turns to consideration of art as a process rather than dealing with Form as an end-product. That Croce's dialectic has been of the utmost importance in directing attention to process, and to the problem of the unity of process, cannot be denied. His influence is to be detected in Abercrombie's phrasing.

What we mean by unity is a fundamental issue. It is no use for a critic such as Bell to claim it for his Form, since that Form is self-sufficient and no testable statement can be made about it. The isolation of Form leads to a criterion altogether lacking in Form, a purely subjective and affective response, which cannot be related to the general processes of personality. The logical result is to be seen in Ironside, who denies any universal validity to the qualities of formal coherence, unity, or order as aspects of a work of art.

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[8] W. T. Stace, 245.
[9] Lascelles Abercrombie, 98, 39, 105.

III

To understand the impasse we have been encountering, we must consider the general problem of Value and its exposition in the work of thinkers like Moore, who show the metaphysical dilemmas inevitable to inquiries which detach 'meaning' from the processes creating meaning. Moore abstracts Value, and therefore asserts that it is a simple notion like Yellowness. Value then is simply itself; since it can be explained only in terms of itself, it is inexplicable, indefinable. We are left only with the immediacy which we discussed in Bell's Form.[10]

The fact is, however, that Yellowness is not simple, but is a matter of varying saturations and intensities, and is relationally definable. Church cuts the knot of the Value-theory by pointing out that process always involves opposites, so that there is no real difficulty, once we turn to experience, in seeing both immediacy (quality) and differentiation (relation) as aspects of a work of art. Such a work has both its Form, with values immediately communicated, and its complex relation to the whole field of human activity.

Church puts this in academic terms: 'any aesthetic situation will consist of felt materials and forms with their immanent and referential expressions found satisfactory in themselves.' We can accept that statement if by 'immanent' is meant the Form, the organic symbol projected in the work, and by 'referential' the complicated relation of the Form to history, to personality, to the whole human process. Though we separate out these two aspects in analysis, in creation or enjoyment they are dialectically fused.[11]

IV

The analyses of Tolstoy and Jung can be cited at this point. Tolstoy lays all emphasis on art as Communication; but because he omits the aspect of Form, he omits all real qualitative distinctions and has to import from outside his criterion of value. What unifies is good; therefore the work with a direct moral lesson is the superior work. That is, he abstracts the emotional unifying aspect and then forcibly imposes it on the material.

[10]G. E. Moore (a) 7f, etc., A. B. Perry, 599ff, argues for criteria of correctness, intensity, preference, and inclusiveness; but these are either subjective or leave a situation as comparable only with itself (Church, 253). In a paper (b, 127) Moore blandly admits all his 'proofs' for the indefinability of 'good' were fallacious, but he still thinks 'that very likely it is indefinable'.

[11]Church, Ch. vi and vii. I. A. Richards tries to make a mechanist distinction between value and communication: 26, 199.

Jung is concerned with the underlying Symbols which play a formative part in creative activity, and which, being shared by all of us in our unconscious, provide the ultimate dynamic of union in the work. His analysis helps us to understand more of the nature of Form, but he tends to treat the Symbols as given archetypal powers rather than to inquire into their organic bases, to find out how they arise and how they work with what Church calls the referential elements.[12]

V

An effort has been made by F. I. G. Rawlings, Scientific Adviser to the National Gallery, to sketch out the way the creative act operates. He approaches the subject from two sides, the material and the psychic—the chemical and physical relations of the paint layers and glazes, and the human significance. A painting, he says, is a *Gestalt*—a word hard to translate, since it means Whole as well as Form, and suggests integrative activity. In the Gestalt school of psychology emphasis is laid on the fact that parts have meaning only in terms of a whole and that wholes are wholes of process. Rawlings thinks that the Gestalt law of Prägnanz applies to the creative act: 'Psychological organisation will always be as good as the prevailing conditions allow,' *good* meaning regular, symmetrical, simple, satisfying.[13]

Since the enjoyment of a picture implies an experience corresponding in *gestalt* to that of the creative act, there is an invariant in apperception. However many personal elements are involved in the act of appreciation, there will also be this invariant, which is objective in nature. Rawlings tries to find a mathematical formula for it, a formula related to those of potential curves in physics. The creative act consists of a release of Free-Energy of which the co-ordinate is Organisation.' The latter contains an implicit geometrical factor, which is concerned with such qualities as form, balance, groupings, etc.' The graph shows the tension and unity between the two co-ordinates, with Organisation seeking to bring Free-Energy to the point of energy-minimum. When the minimum has been more or less successfully reached, the picture is 'finished', and we get a conviction of unity, power, peace. Where it has not been reached, we feel irritated, drawn into the unexhausted or

[12]Valuable applications of analytic principles are made by Maud Bodkin in her *Archetypal Patterns in Poetry* and E. A. Armstrong in his *Shakespeare's Imagination*. Lowes's *Road to Xanadu*, etc.

[13]Rawlings, (a) 263ff.

uncontrolled energy-burst. We have the feeling that we want to get at grips with the work and right it.

IV

The comparative success of such analyses as those of Church or Rawlings in getting outside the impasse of the Value-abstractionists or the Form-mystics is derived from the extent to which they realise art as a process and not as a thing. Once we get this key, we see the falsification which results in taking only the Form as Bell has done, or only the Content, as Tolstoy has done. Arguments which attempt to pose Realism against Formalism generally turn out to have hold of the wrong end of the stick. They are concerned with empirical judgments of the end-product, not with the living process.[14]

If we turn to the living process, art is seen as a form of integration; and since the process is of the whole man, it includes both what Church calls the immanent and referential elements of experience, the Jungian symbol and the movement of history. By an empirical criterion such as Realism we cannot explain why Rubens is a great integrator of the life-process in the seventeenth century and Picasso in the twentieth; any more than we can explain it by recourse to a concept of Self-Sufficient Form. Only the concept of Integration can include all that is vital in the approaches via both Realism and Form. Rubens integrates sense, thought, feeling in the particular Form of his paintings because the needs of his period—the needs of the whole-man in that historical context—can realise their fullest potentiality only along those lines. Picasso, in a different historical situation, moves along different lines of analysis and concretion in order to defeat the pressures of dissociation actually at work and to reach forward into new organic harmonies. No criterion of 'realism' or of abstract form can explain why at this phase (the limit of Industrialism's destruction of the old craft-bases) Picasso's definitions are relevant to human needs, whereas a 'realism' apparently carrying on Rubens's method could only work out aridly and academically detached from the real creative issues of our day.

Form *is* Content. This, as Abercrombie pointed out, is true of creative activity in all its stages, conscious or unconscious. The

[14] The real dialectical issue appears in Soviet criticism in discussions as to the *New Man*– i.e. the ways in which the transformative process of Soviet society can be best defined. And here the term Realism is often used to express, not the product, but the *artistic laying-hold of process*, the new unitary form needed.

final Form, reached according to the Prägnanz formula, is the final objectivication of the inner conflict, the degree of unity between energy and organisation which prevailing conditions (inner and outer) allow.

Can we advance from that definition? Art, we can say, is the *Structure* of human process arrested and objectified at a certain point (the Prägnanz point): the *Pattern* or *Form* is the projection of the structure. *Rhythm* is the movement of the process employed in bringing about this projection, and is revealed in the Pattern. The moment of projection reveals further a *Dominance*, the keypoint in the development leading to the work of art, which expresses the particular relation of inner and outer, organism and environment, individual and history.

The keypoint, expressing and revealing the Dominance, is *integrative*. It expresses 'the arrangement of organic structure and tension so that *a single characteristic form* is developed.' (I use this terminology because it relates the creative act to general evolutionary process.) Development may be defined as *Decrease in A-Symmetry*, and the Dominance is *the relation of the Form to the Process it facilitates.*[15]

That is, the artist, seeking to unify a confusion and conflict which is going on inside himself and which is dialectically one with confusions and conflicts going on outside, strives to develop the conflict in organised expression. He grapples with the discordant (a-symmetrical) material—himself and the world—and seeks to overcome its a-symmetry. In doing so, he creates a new form. He reaches forward into the potential and makes it the actual. He is not concerned at all with reflecting the present, with being realistic. He is concerned with facilitating the life-process. To bring about his aim, he must however embrace the actual: otherwise he will lack the essential conflict out of which creativity proceeds and will be dealing with simple wish-fulfilments. The more he can embrace of the actual, the stronger the conflict and the greater the drive forward into the levels where present conflicts and a-symmetries are resolved in an extended symmetry. The stronger his drive to

[15] I try to work from the terms set out by L. L. Whyte in his Glossary 269-71. May I anticipate misunderstandings by pointing out that by Symmetry I do not here mean simple and formal balances, but the fullest balance in terms of the Prägnanz principle.
Note how Goethe with his deep insight catches hold of the image of the transformation-moment (discussed above on pages 98 and 105-6) to define the creative realisation. 'On the instant the plan of *Werther* was formed, and the whole drew together, and became one solid mass, just as water in a vessel, which is upon the point of freezing, is converted into hard ice by the most gentle shake,' ii, 127.

harmony, the greater his need to embrace more and more conflict, in order to overcome it. He judges life always in terms of the potential, and his aim is one of integration. His acceptance and comprehension of the world and himself are only in terms of the resolving harmonies which he intuits and which he brings into existence by his creation of Form.

VII

These terms which I am putting forward are meant as a basis for discussion, a first step towards defeating the impasse to which the abstract consideration of Value-judgments has reduced our criticism. As stated above, it is highly generalised. But what is needed at the moment is a generalised scheme, a methodology, to which the many important investigations already made into various aspects of creative activity can be related. Only on some such lines as I have sketched, I think, can what is valid in the different schools of thought be brought together and developed. Jung has helped us to understand the unconscious patterning; Freud, the vast mass of referential details which at any given moment involves elements from babyhood and the immediate present. We must bring these two analyses together, and go yet further into the scientific investigation of how the forms of symbol are created, how the patterning activity actually proceeds both in its earliest formative period and at later stages, and how the Gestalt methods for isolating what one may call the physics of psychic activity can be related to the fuller spheres of Jung and Freud.

Such an approach will further end by showing us how to relate inner and outer in the creative act in the fullest sense, since outer will include the total movement of history in which the individual is involved. The relation of the artist to his society will cease to be a largely external and shallow matter of overt political and social motives, but will be seen in a much richer and complex sense where the overt motives will be correctly correlated with the whole movement of expression. More, there will be a renewed impetus given to the technical analysis of influences in a particular artist or art epoch, and of the ways in which one epoch merges into the next. For all these aspects, at present for the most part treated in isolation, will be organically linked with the whole life-process of which art is an essential integration.

Until this work is carried to a certain level of clarification, it will be impossible to speak in other than general terms of what is

meant by such matters as Form and its relation of dominance to the process it facilitates. That process is the process of the human whole; and we can at least meanwhile keep before us this general point in order to avoid or defeat premature attempts to lay down the law narrowly on the functions or subject-matter of art. Realism, Escapism, Fantasy, Formalism are at best empirical descriptive terms applied after the event; at the worst they are polemical weapons used illegitimately in the arena of aesthetics. They can give no help in determining what is the problem now facing the artist, what is the 'single characteristic form' he needs to develop, and how he best facilitates the life-process of our day. It is worth noting that a fine poet attempted, during a recent discussion in France on the possibility of a general aesthetic, to advocate Realism as the criterion. But in order to safeguard himself against having his criterion used to defend the trivial and the journalistic against the sort of work he actually admires, he has had to go on to say that he called realistic many things which did not commonly possess that title, and vice versa.[16] In short, if a sincere artist or critic is going to use such empirical terms he has to juggle with them and move from material to inner content, from direct social relation to imaginative grip on inner meanings, and so on, in a way which ends by invoking a purely subjective basis of selection. The true dialectical viewpoint can be achieved only by turning from the dissection of the end-product to the process which begot the product. The old antithesis of Form and Content can no longer be used; it gives up its scholastic ghost; and the term Form (used as in this essay) must always mean Form-Content, a crystallisation of Process.

VIII

I have referred to the many valuable contributions which have been made towards grasping certain aspects of the creative process. One, which I should like briefly to describe here, is that of Löwenfeld. Dealing mainly with the work of weak-sighted or

[16] 'Et bien entendu, que s'il ne faut pas donner au mot réalisme le sens photographique que bien des gens lui donnent, si je défends souvent pour ma part même des artistes, des écrivains, qu'on ne peut appeler des réalistes, pour cette part de réalité précisement qui se reflète dans leur oeuvre . . . .'

Contrast Lenin's emphasis on the essential element of *fantasy* in all creativeness, and note Marx's fine statement of the creative part played by fantasy in effecting basic changes. 'The resurrection of the dead, in these revolutions, has the effect of magnifying the new struggles, not of parodying the old ones; exaggerating in imagination the task to be accomplished, not subtracting oneself from the solution *by taking refuge in reality*; of rediscovering the spirit of revolution, not evoking its spectre again,' i, 25. (My italics.)

congenitally blind children, he has shown that at the heart of pictorial or plastic art-process lies an impulse in no way concerned with visual imitation. He calls this impulse autoplastic, a movement born from the whole body of the artist and emotionally directed to achieve a unified effect. A blind child, who produces a highly-unified plastic work of emotional definition, is obviously basing his work wholly on this autoplastic impulse, a projection of the total organism.

Further, in dealing with the successive stages whereby a child develops his artistic grasp, he shows how a series of abstract schemata are built up, continually modified and deepened by expressive value-judgments and by distortions based on bodily experience or muscular sensations. By such detailed investigations we can hope to find out how Form is built up out of the *whole experience* of the individual, and how the unifying principle, partly visual-intellectual and partly autoplastic, does go to work.[17]

Out of these multiple approaches we can begin to understand the actions of art in its fullness, and in time work securely towards that unitary realisation which will enable us to grasp clearly the function of art in the life-process of men. Meanwhile, even such a very rough statement of methodology as this essay has set out can be of use in keeping the ultimate goal steadfastly before us and in preventing us from falling into dogmatic error either on Tolstoy's or Bell's side of the fence. Though I have here dealt with the visual or plastic arts, the same general principles apply to all the art-forms of expression.

A. A NOTE ON SYMMETRY AND ART

I hope it has been made clear that the action of the Prägnanz principle must always be understood in terms of the full psychological situation. We feel greatness in those works of art in which a deep conflict has been successfully overcome: that is, where the resulting Form reveals a maximum-minimum relation. The artist has persisted in his effort to grasp the full concrete elements of the situation which he is expressing, to eliminate the irrelevant, and to end with a Form in which the maximum

[17] V. Löwenfeld, (a) and (b). L. describes two main types (visual and haptic): even a congenitally-blind person may be of the 'visual' type. But autoplastic unifying elements underlie the work of both types in different ways.

of simplification is revealed with the minimum of 'free energy'. The consequent complexity of variations in method and definition is endless. For the situation involves not only the personality of the artist, in its full organic and social basis, but also the tradition of craft-technique, the whole cultural tradition in which he is developing.

In speaking then of a symmetrical basis in all expression, we are not suggesting any formalistic set of equivalences, but a resolution and balance achieved in terms of the *full situation*. But the fact that the symmetries of art are highly complex and variable is no reason for denying their existence or refusing to accept the primary generalisation which I am attempting to set forth here.[18]

II

Various empirical attempts have been made to distinguish the function of symmetry in art-expression and appreciation. Lipps investigated the Empathy, or Feeling-into, which the observer experiences in looking at lines, curves, forms—the movement which draws us in, or which we feel as stirring and striving in the forms themselves. Empathy certainly appears in all response to art-forms, and exists in the creation of them as part of the whole affective attitude of the artist. When the work of art controls this inner movement and implication of forms, colours, planes, masses, volumes, etc., it gives satisfaction. The more fully it controls, the greater depths of satisfaction we continue to feel in it.

E. D. Puffer experimented with the sense of satisfactory arrangement. For instance, she took a black oblong board and put a narrow strip of white cardboard on it, and then asked numbers of people to place a strip twice as long in the position that gave them the greatest satisfaction. From this and other similar tests she decided that symmetry played a central part in art-organisation and brought about 'a set of reactions corresponding to the organism as a whole'.[19] But

> the 'balance' we demand in a picture is no mere geometrical symmetry, or equality of mass of the objects on either side, but . . . the more subtle

[18] Ironside compares pictures by Klee, Poussin, Pisanello, and Turner; and declares that only one has 'a formal coherence, unity or order of some kind'—a nonsensical statement which limits coherence to one particular kind of design. Each painting is in fact highly organised, coherent and unified in the terms of its 'situation'. Ironside has so mechanical an approach that he thinks the aesthetic significance which a sketch or fragment may possess refutes the theory of 'unity'.

[19] Puffer. Cf. Angier, Haines and Davies, etc. Also, H. Read (b) 48-50.

influence of interest, and attention, and possibly of suggested movement are predominant in giving the beauty of symmetry to a picture.

Such principles are doubtless chiefly of negative value to the artist, teaching him what to avoid. But in the composition of his picture the artist must have further positive reasons for placing his objects. Composition, according to Ruskin, may best be defined as 'the help of everything in the picture by everything else'; and it is, he says, such a complex problem that there are but few elementary laws of arrangement traceable a little way.' In painting, as in poetry, 'mere fitting and adjustment of material is nothing; that is watchmaking', while 'helpful and passionate harmony' is the outcome of sacred invention.[20]

The fact, however, that no formula of symmetry can be set out is no disproof of the law of Prägnanz. Rather, it follows from it. Each act of creation is unique in that it deals with a particular pressure and disequilibrium between artist and world which cannot recur, so that the resolution in every case must be unique. But the process of organisation follows general laws.[21]

[20]Valentine, 62f. These analyses deal with symmetry on simple lines. For a more complex analysis, see Rashevsky (a) ch. xii and (b) ch. xxii. But such efforts as this (or Birkhoff) to find quantitative measures must be reformulated in Gestalt terms.

[21]Now that some two years after writing this chapter I have been able to go into the Soviet art and literary controversies, I find under the different terms a substantial agreement. The Soviet critics are basically concerned (*a*) to find *how art plays its part in the total transformation of man;* (*b*) *what is the relation in socialist art between the actual and the possible, the realistic image and the transforming factor;* (*c*) *what is the unitary element binding such an art in all its variety.* The important thing is not the very insufficient conclusions yet reached, but the fact that such issues are raised and the direction they take. (Jan. 1949.)

CHAPTER SEVEN

Psychology : Suggestions for a Methodology

IN THIS CHAPTER I shall attempt only a brief discussion of the main contributions of the three leading schools of modern psychology, Gestalt, Psycho-analysis, and Jung's Analytical Psychology. I have already indicated something of my attitude towards these three schools, but for the purpose of this book it will be worth while to elaborate my comments a little and then attempt to show something of the lines on which I think the positive contributions of each school can be brought together in a unitary methodology.

Gestalt is a psychology of dynamic patterning concerned to understand the mind as an integrative process. The term *gestalt*, said Köhler,

> has the meaning of a concrete individual and characteristic entity, existing as something detached and having a shape or form as one of its attributes.[1]

Koffka hastens to add that the pattern is not detached in the sense of being isolated:

> A gestalt is therefore a product of organisation, organisation the process that leads to a gestalt. But as a definition this determination would not be enough unless one implied the nature of organisation, as it was expressed in the law of Prägnanz, unless one remembered that organisation as a category is opposed to mere juxtaposition or random distribution.[2]

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[1] Köhler (b) 192.

[2] Koffka (a) 682. For the Law of Prägnanz, see § 5 of Ch. 6. The Law relates organisation to certain maximum-minimum principles. 'Roughly speaking, a minimum simplicity will be the simplicity of uniformity, a maximum simplicity that of perfect articulation,' Koffka (a) 171. 'The final time-dependent distribution contains a minimum of energy capable of doing work, Köhler, (a) 250 and (c) 533. In the case of a relatively small sub-system and a large reservoir it can draw from (the two making up our total system), then in the process the sub-system draws as much energy as possible and at the end has a larger energy-content than before. Thus, if the reacting system can draw on much

Wertheimer insists that in the process of organisation: 'what happens to a part of the whole is determined by intrinsic laws inherent in this whole.'[3] So that the process as much as the product of organisation is a gestalt. Gestalt psychology is committed to tackling the processes of the self in order to grasp the characteristic structures by which the self articulates its life and movement.

To apply the category of cause and effect means to find out which parts of nature stand in this relation. Similarly, to apply the gestalt category means to find out which parts of nature belong as parts to functional wholes, to discover their position in these wholes, their degree of relative independence, and the articulation of larger wholes into sub-wholes.[4]

II

All perceptual organisation is organisation within a framework and dependent on it. The main directions of the field constitute the framework.

Using these general findings, Gestalt seeks to show the differentiations, segregations, and patterning complexity which arise within the field of the ego and the personality. It uses the minimum-maximum formula of the law of Prägnanz to explain the relation of energy and articulation in the process of living. The self goes on ceaselessly expressing itself, breaking down into confusions, reaffirming itself in new patterning integrations, and finding afresh tensions within and without.

In our psychophysical case, then, we have two kinds of forces, those which exist within the process in distribution itself and which tend to impress on this distribution the simplest possible shape, and those between this distribution and the stimulus pattern, which constrain this stress towards simplification. We shall call the latter external, the former internal forces of organisation, external and internal referring to that part of the whole process which corresponds to our perceived form.

If our hypothesis is true, we should expect very stable organisations whenever the two kinds of forces act in the same direction . . . Conversely—if the forces are in strong conflict, the resulting organisation should be less stable.[5]

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energy, it will do so and achieve articulation (simplicity of maximum kind); if its energy-supply is limited or cut off, the minimum sort will result. (Köhler applies this principle to organic growth and its increasing articulation (c).)

[3] Wertheimer (a) 7.

[4] Koffka (c).

[5] Koffka (a) 138f.

The organism seeks to preserve itself, its equilibrium and stability. It 'may be said to behave as an intricate system of material processes, tending actively to maintain a complex pattern under constantly changing conditions.'[6] But the effort to maintain pattern amid changing pressures and influences always means an extension and further complication of pattern. The simplicity or order-balance which reasserts itself always does so inside a new situation which includes the disturbing factor (or part of it). 'What actually happens is not a mere conservation of pattern, but its development.'[7]

Thus, organic life is a ceaseless extension of pattern; and Gestalt seeks to show how the ceaselessly-disturbed equilibrium between the self and the world creates a ceaseless process of articulation of mental forms, which are isomorphic with physiological processes and which belong to a single field of force with the outer impacting world. Intellectual or spiritual life is only one particular case of the general law that growth or process is a reassertion of symmetry (organic balance, stable pattern) in a new situation.

The Ego behaves like any other segregated object in the field. The Ego is not a constant quantity or thing; it is articulated by the same law as a single cognitive pattern. Human growth is in fact a prolonged unending articulation of the Ego with enriched symmetry. To define the gestalt of the personality would mean

> to consider all the different sub-systems of the Ego, the richness and complexity of which we discussed . . . ; the way in which these sub-systems are organised, their relative degrees of dominance, their mutual communication, and their relative 'depth'. By this we mean their surface-centre localisation, or their connection with the Self, the very core of the Ego.

Furthermore the 'openness' or 'closedness' of the whole Ego would have to be investigated, i.e., its relation to the surrounding field. The

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[6] Humphrey, 41.

[7] Koffka (a) 309. As an example of the asymmetrical forms or forces that the self has ceaselessly to overcome we may take Space itself. 'Behavioural space is not Euclidian, or, otherwise expressed, it has different properties in different directions. Two aspects of this anisotropy have to be distinguished. On the one hand organisation of figures and things creates stresses which are not restricted to the segregated units but affect the surrounding field to a larger or smaller extent . . . On the other hand space as a framework is itself anisotropic and determines by its anisotropy the organisation of figures and things within it. We have emphasised the fact that there are main directions, and that these main-directions exert functional influences upon organisation,' Koffka (a) 275. Note how all this ties up with the remarks on art-expression, Ch. 6.

dynamic intercourse between Ego and environment must depend to a large extent upon the nature of the Ego itself. And in this investigation the products of civilisation must be included [8]

III

Before I comment on Gestalt, I should like to summarise one other aspect of its analysis: its treatment of the problem of Memory. It turns a number of dilemmas which have baffled thinkers, by pointing out that memory-traces form organisational wholes, whose pattern is as real as their material. We therefore cannot reduce unit-formation and shape to experience (i.e. to traces). Rather, we must see that traces are organised systems produced by organised processes, and a reviving excitation is itself patterned.

Processes occur in systems already endowed with traces; it is this alone that makes mental development intelligible. For by occurring in trace-endowed systems processes will be influenced by the traces, and the novelty of a process itself may in large measure be due to the traces. Such a process leaves a new trace in its wake, which in its turn may contribute to the arousal of another new process without which it could not have arisen.[9]

In dealing with learning and other memory functions, Koffka shows that intrinsic relations act as dynamic relations. Otherwise, one can admit only the workings of blind mechanisms or of a mind which from above the body can look down into the relations and interact with the body. And the second alternative with its dualism leads straight to idealism or vitalism. So Gestalt insists that intrinsic relations enter into every real problem-solution—that is, every effective grasp of reality. The dynamics of the spiritual process are inseparable from the intrinsic properties of the data. The formative unitary powers of the mind create the relations as well as realise them. The need to assert balance in a fragmentary or unsatisfactory situation (ignorance, inarticulateness, etc.) drives the mind on to define or realise the full situation, in which balance or completedness is restored to the universe.

Take, for instance, the case of a mathematical problem.

What seems so startling in the application of this proposition to thought-processes is that the kind of intrinsic properties which are to be considered as dynamically effective seem to exclude such a consideration. How can a purely logical relation exert a real force on a real process in a nervous

[8] Koffka (a) 678f.
[9] Koffka (a) 542.

system? . . . And yet, even here we possess a good analogy in perceptual organisation: the principle of closure. Just as a perceived circle will, as a psychological process, 'tend' towards completion, so will $x^2 + ax$, once it is seen as an incomplete square, tend to be completed.[10]

And just as Gestalt thus shows how the intrinsic relations of a problem are dynamically identical with the insight of the act of solution, so it shows that 'significance' has been made a problem only by an act of abstraction. Once we see that a fact is never a fact in isolation but is always a fact in an intrinsically coherent whole, we see that significance and fact are not two concepts belonging to different realms. A whole is an integrative process, and its wholeness is significant. The relation of part and whole, of fact and total movement, must possess meaning. Further,

> If a thought process that leads to a new logically valid insight has its isomorphic counterpart in physiological events, does it thereby lose its logical stringency and become just a mechanical process of nature, or does the physiological process, by being isomorphic to the thought, have to be regarded as sharing the thought's inherent necessity? Our attempt at integration has claimed the latter, thereby incorporating the category or significance within our system.
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> That at this point the development of the theory will have to overcome great difficulties is perfectly obvious to me. At the same time it should be recognised that a beginning has been made to face these difficulties and to conquer them.[11]

IV

Yes, a beginning has been made; but as Koffka humbly admits, many difficulties remain. At the end of Chapter 3, I have already indicated a first criticism of the Gestalt system. Isomorphy is only a helpful formula, not a scientific explanation as to how physiological changes are one with spiritual processes. And despite an insistence that cognitive elements in experience are bound up with conative elements,[12] and that social and cultural elements are a fundamental portion of the behavioural field, the analysis for the most part treats only certain attentive elements in the process of cognition. In Koffka's *Principles*, a book of 685 pages, Society appears only at page 648 and

[10]Koffka (a) 631. Again note how important this formulation is to the problem of art process.
[11]Koffka (a) 684.
[12]Wertheimer (a) 15

Personality is covered by pages 676-9. Yet in such an integrative psychology the full human factors, social and cultural, should have been emphatically brought forward from the start. The stresses in the behavioural field include social and cultural elements from the very first moment of a child's life.

The result is that Gestalt, while seeking to affirm the reality of integrative wholes throughout human life, tends to treat spiritual process in terms of a kind of psychological physics. We see the self building up a vast system of articulations, and we are faithfully told that 'without understanding the social factors of behaviour we cannot hope to understand behaviour',[13] but we never see how the behavioural field which includes the social factors does really operate outside the simpler aspects of perception and memory. The full processes never emerge.

V

If we turn from the strangely colourless world of gestalt organisations to the world of Freudian research, we feel a shock. Here seems everything which Gestalt omitted, the whole violent, confused, tormented, and joyous world of human reality. The opposition seems indeed complete. Gestalt dealt with characterless integrative forms and forces; Psycho-analysis deals with a mass of conflicting forces and symbols in which we at once recognise something of our daily experience, but it has hardly a word to say on integration. Indeed it seems to have no logical explanation as to how personality does not in every case split into hopeless schizophrenic divisions, lost in an ambivalent unconscious which can never issue in action. That is to exaggerate, but at the same time to point to the weakness of Freud's work. If Gestalt in the last resort seems to have only a set of maximum-minimum energy charts to represent reality, Freud also dissolves the real connections of personality and seems to show us a generalised figure inside which a number of manikins labelled Censor, Id, Ego and Superego, and so on, skurry around grappling with a vicious force named the Libido.

But there is of course much more in Psycho-analysis than this set of marionette personifications, as there is much more in Gestalt than the charts. Freud has introduced a number of positive conceptions which have changed once for all our attitude to the inner life. Let us look at these in Freud's own terms, and then examine those terms. First, there is his concept

[13] Koffka (a) 648. K. Lewin and others have begun to fill the gap. For Lewin, what breaks and makes personal and social equilibria is the key-issue.

of the dynamic unconscious (linked with the conscious by the pre-conscious).[14] There is still much confusion as to exactly what the unconscious is, but that does not lessen the importance of the concept for all future psychological inquiry.[15]

Secondly, in the relations between conscious and unconscious, with mediating pre-conscious, Freud has disentangled a complex mechanism of censorship, of resistance and repression, as well as a positive relation which he calls sublimation.[16] There is no simple flow of forms and forces between the levels; on the contrary there seems a fierce and involved conflict at every point; part of the flow gets through easily, other parts are obstructed, distorted, forced back. In the depths of the unconscious are a number of 'primordial impulses and instinctive urges that are constantly welling up, as it were, and pressing forward to find some relief or satisfaction.' This, Freud calls the Id. 'It is the quite undifferentiated basis of the whole mind.'[17] (An early differentiated part as the psyche is the Ego, 'whose main function is to establish relations between the individual organism and the outer world, including the human environment.')

Thirdly, Freud shows that character-construction is bound up with the processes of reaction-formation and sublimation which result from the tensions and harmonies between the opposing levels of the psyche. Some of the Id, he says, is cut off and opposed to the Ego; part of it manages to flow into a unity with the Ego. The cut-off part forms the basis of repression. In turn a part of the Ego is differentiated off into a Super-Ego, the most moral section of the personality.[18] These differentia-

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[14] Freud (b) 105.

[15] Freud of course had many forerunners in this respect. In 1840, when Marx was studying Hegel's identification of the entire historical process with the development of the spirit, a biologist, Carus, had come to the conclusion that the 'key to the understanding of the conscious life of the soul' lies 'in the unconscious,' Whyte, 142. Freud's forerunners were rather thinkers like Schopenhauer and Von Hartmann. Carus influenced Dostoevsky.

[16] The Soviet scientist Luria produced repressions in the laboratory, and so 'proved' Freudianism. His experiments 'confirm the fact that unconscious and active mental processes do exist; that these processes remain unconscious due to an economic mechanism of repression which manifests itself as resistance in the conflicting nature of the cure; and finally, that the free flow of associations is determined and in part derived from the subject's secret complexes,' Bartlett (a) 26; Luria, 133-50.

[17] E. Jones (c) 22.

[18] Freud (d). The Super-Ego has a tendency 'to punish thoughts with the same severity as actions . . . to extend the condemnation of a specific desire to all desires remotely associated therewith. . . A neurosis of long standing represents a peculiarly stable compound of the forces of the Id and of the Super-Ego,' Flügel (a) 136f.

tions are given strength by a series of identifications of the self made in the infantile years with those adults who stand in a potent relation to the child—those who give food and the sense of security. Father and Mother, or their surrogates.

The Oedipus Complex is the classic form in which conflict arises in this situation. The desire to possess the food-source leads to a desire to eliminate (kill) the rival. To possess the Mother entire is to kill the Father. This infantile emotion, registered in primitive form, is soon repressed. The desire to find unity (identity) or harmony with the Father, the Power or Authority-figure, conflicts with the hidden desire to destroy him. This strain appears in the differentiation of Super-Ego from Ego. The Super-Ego, the pure Authority-figure, threatens the Ego for its complicities with the Id—for its desire to find satisfactions and pleasure-releases. In a sense then, the Ego is pressed in between the Father and the Mother, the Moral Law and the Impulse of Desire.[19] Thus, the first simple self-identifications, out of which the primary balances of personality are created, lead into a much more complex series as the child moves out of the family-circle into an extending social arena.[20] The Super-Ego relates its tensions to those existing in society, and so the mythic Father-of-Authority is identified with the ruling moral and ideological forces around the individual. The resulting pattern of behaviour and character is highly complicated. At the one end of the scale is the neurotic in whom fear is so deeply rooted that he retreats from all attempt at satisfaction under the threat of the Super-Ego; at the other end is the rebel who defies the ruling powers in the determination to resolve the existing conflict and achieve a fuller satisfaction; in between are the endless forms of compromise and partial balance.[21]

Fourthly, there is the therapeutic process whereby a neurotic obstruction or obsessive conflict is removed or resolved. This process, brought starkly out into the open in the case of the

[19]See e.g. Flügel (a) This is the 'bourgeois' concept of a basic split between Pleasure and Morality, which is in fact one aspect of dissociation in personality.

[20]Here Freud fails to make an effective analysis. Oddly, his work shows him tethered to an intense father-antagonism, which works out in a male self-glorification reducing the woman to status of a 'castrated male'. Horney has amusingly turned the tables and for 'penis-envy' substituted a male desire to emulate the mothers 'productivity'!

[21]I of course go outside the normal application in this sentence; the flaw in psycho-analysis is that it treats Society as a given factor or situation into which the 'cured' person must harmoniously fit himself. For the most part psycho-analysts treat Politics as a mere projection of the Oedipus Complex, e.g. Pryns Hopkins, or thus reduce all the motive forces and forms of culture: Freud (c and g). But many psycho-analysts are now moving to a more dialectical position.

neurotic, operates, however, in all experience in less conscious ways. (The conscious element in the therapy is the psycho-analyst, who is deliberately controlling the movement and its points of revelatory tension.) The psycho-analytic therapy has close likenesses to the structure of Greek tragedy. In it the two antagonists, patient and analyst, come together; the patient pours out his 'free associations' and tells his dreams; the analyst becomes identified with both the forces of release and repression; the patient lives out anew his fantasy-life in relation to the analyst and the neurotic tensions expose themselves; at the crucial point the analyst forces the patient back upon himself, forces him to detach reality from the fantasy, forces him to bring the whole obstructive complex into consciousness. This is the moment called in Greek tragedy, Recognition. The whole past structure of experience is suddenly lifted on to a new level of awareness.[22] And the patient can return into normal social life, able to hold his own.

VI

A great deal of these basic Freudian formulations are directly illuminating. But there are some heavy weaknesses. If the Gestalt descriptions seemed to make of human life a ceaseless extension of structure at the biochemical level, Freudianism seems to make the psyche a theatre or temple in which a ritual embodied in mythological figures is carried on.[23] In scholastic fashion, faculties or sub-systems of the psyche are endowed with a sort of inherent and separate life; and the reason for this scholastic attitude lies ultimately in the rigid opposition between conscious and unconscious. Those two aspects of the psyche are not viewed as parts of a total process of life in which organism, society, and nature make up the full field. They are considered inherent in 'human nature'; and all history, all social activity, all cultural creation become nothing but a projection of their conflict.

The central error is perhaps that which finds the basis of

[22] Part of the recognition-process is the discovery of the meaning of unconscious symbols and images. Though at times over-confident, narrow and schematic Freudianism has done magnificent work in this explication (e.g. Stekel).

[23] 'All this may sound a little reminiscent of an ancient mythology, where distinct deities were endowed with particular functions, but the effect of personification is solely due to the necessity for a condensed description', said E. Jones, (c) 23f, in defence, but he admits too much. 'Actually Freud considers that the various attitudes and functions mentioned are brought about just as automatically as are those pertaining to the body itself, and he expressly maintains that the idea of personality is confined to the ego alone.'

the unconscious in primordial instinctive urges, which are fundamentally opposed to consciousness and the Ego, and which can only in small part be accepted or absorbed by the conscious levels. Personality is inevitably created out of a ceaseless series of conflicts, tensions, unbalances, which the organism keeps resolving or restoring to stability; but this conflict is in no sense a matter of conscious against unconscious. Its tensions operate *at all levels of the self*, as much in the unconscious as the conscious. The formative process works in the human being by an extension of symmetry, an activity which includes both conscious and unconscious; the struggle for unity goes on at both levels, from both aspects of the process which makes up the individual being. There is no such thing as a given body of instinctive urges and desires existing in stark separation from the socially-orientated personality. There is in fact no such thing as instinct in this sense at all.

Here lies the basic flaw in Freud's formulations, which must be understood before we can make a fully fruitful use of his work or relate it to the system of unitary dialectics. In point of fact he continually overcomes the weakness, in the working-out of his thought and the application of his therapy. What he calls unconscious ambivalence is really conflict at the unconscious level; and the Censor is not a myth-figure standing at the door of the consciousness knocking down or maiming the impulses which rise below, but is a vital organising factor. The conflicts which Freud deals with in his patients exist at all levels of their experience; and what his therapy does is to get at certain earlier traumatic experiences, in which the conflict tied itself up in knots, and then to untie the knots. In so doing, it shifts the whole balance of forces throughout the psyche and allows the formative process to move into new integrations.

But the flaw remains, preventing Freud's thought from its full and proper development; and above all, preventing it from getting into right focus the relation of individual and social process.[24] Only if we understand the way in which tensions arise throughout the whole psyche from the moment of birth and always include a social factor at all levels, can we hope to see individual and social aspects as different aspects of a single movement.[25] Once we begin with 'instinctive' urges which are

[24] One example of Freud's mechanism appears in his concept of sexuality: he ignores the way in which puberty produces a new organising centre that makes the sexuality of the adult fundamentally differ from the child's.

[25] To talk of the pleasure-principle and the reality-principle is only once more to abstract the points at issue and explain them by giving them names—i.e. scholasticism.

soon largely repressed, we have shut society out. It appears mainly as a sort of neutral screen on to which persons project their father-and-mother fantasies or as a villain in league with the Super-Ego to enforce all sorts of repressions. It can never be integrally related to the processes of the psyche, which swell up into the fateful forces that Freudianism usually makes them. From the Freudian angle the masses of men appear as nigh-tormented creatures, torn by desires which they promptly crucify, and projecting the fated conflict into various social, cultural and political forms. Obviously, it would take thousands of years to begin even affecting such a situation in a small way. Only when the fate-patterns are seen within the full stream of social and personal process do we realise that such an outlook is hopelessly false and narrow, and that the fate-patterns are in fact also the patterns of freedom.

Society is not a projection of unconscious conflicts into which cured neurotics must be fitted one by one till somehow, someday, enough millions have been fitted in and society itself becomes sane. Society is a rapidly changing situation, in which changing men play their parts and in which the total formative process of human productivity (including science and the arts) has the last word.[26]

VII

But when the worst is said, what a debt we owe to Freud; with what patience and insight he has shown how the associative activity of the psyche really works, how organic experience develops symbols, and how the fundamental pattern of experience is that of a dialectical unity reaffirming itself out of conflict—a light of unifying realisation which, suddenly comprehending the past, changes the present and creates the future. Once we rid his method of its dualistic factors, we can use it to grasp the way in which the psyche is emotionally articulated; and then we can fuse it with the Gestalt demonstration of the way in which the psyche is intellectually articulated.

It then becomes clear that what Freud treats almost entirely as a repressive mechanism is in fact an economical process in which the main emphasis is on integrative shaping of experience. Thus, Varendonck declares:

The originally repressed idea is neither dead nor passive. It may be on the contrary, intensely dynamic and alive. It organises associations. It

[26]For this reason the Freudian emphasis on infantile experience loses much of its force—or rather, finds its significance from a new angle. In this I agree with Wortis (179) though generally he over-simplifies.

creates products of its own. It has a rich unfettered development, 'in darkness as it were', exercising attraction on everything with which it can connect itself. This is what is meant when it is said that repression does not *destroy* an impulse. What it really does is 'to disturb the relation to the conscious system'. These creations of the repressed idea continue to develop in phantasy unchecked, until, under certain conditions, they are enabled to come to light in the neurotic.[27]

E. A. Armstrong aptly comments: 'Substitute for "repressed" the word "activated" (charged with intellectual interest), and we have an excellent description of what happens in the zone of creative imagination.'[28] Then, under certain conditions, the phantasy is enabled to come to light in the work of art.

Armstrong continues:

> The same system has ambivalent functions, repressive and constructive, rejecting some items and selecting others. Freud has maligned it by emphasising one aspect of its activity. Its selective function is usually, if not always, exercised adaptively—to enable the individual to cope more adequately with the problems of all kinds which life presents, but sometimes in seeking an immediate solution by selecting troublesome material for relegation to limbo it lays up future embarrassment for the personality.
>
> The Censorship of Freudian psychology is an aspect of the principle of adaptation by which the organism relates its internal reactions to the impacts of the external world. The intermediate level of the mind, the lever of selective subconscious association, is seen to be alive with potentialities for creative freedom of association as well as for repression.

And he rightly emphasises that in the true creative act the whole process of the self, which includes both the formative unconscious and the purposive conscious, is implicated. In such an act the Gestalt law of Prägnanz, which (according to its formula of maximum-minimum energy) shows achievement as a simplicity of full articulation, is one with the Freudian principle of a conflict overcome by the act of unifying recognition. 'Sublimation' falls into place with the general concept of integrative process.

VIII

But we still need a further organising factor to bring the Gestalt and Freudian analyses together; and that is perhaps

[27] See Levine, 117f. Varendonck in fact says that 'intuition seems to be the reverse of repression,' 291. J. T. Davies at moments sees 'sublimation' as the act of the whole self, but falls back on the Freudian 'split' of libido and ego, and so can call on a transcendental factor to explain development; Cf. De Sanctis.

[28] Armstrong, 176f. Freud's one-sided attitude continually appears: 'The function of education is to inhibit, forbid, and repress' (b).

supplied by Jung. We can best approach the problem by asking more precisely what is the unconscious. Without examining at length the varying Freudian statements on this subject, we can say generally that the Freudian unconscious is primarily conceived as the darkness into which repressed impulses sink.

Freud's predecessors mainly raised the problem of the unconscious in relation to the processes of thought, perception, memory. But in the later 19th century, clinical work in hypnotism and other psycho-therapies focussed attention on pathological problems of dissociation. Janet, the leading figure, suggested that dissociation of personality occurred as the result of a lack of 'tension' or cohesive force; a reduction of available energy seemed to make it impossible for the sufferer to hold the parts of the mind together. Freud turned from this question as to what unified and stabilised the psyche, to the direct analysis of specific conflicts, antagonisms, between the dissociated parts.[29] He thus began with a dualism, which he never overcame but which enabled him to get at grips with the material of neurosis.

The mind, he said, is conative or striving; in that lies its essential function. Dissociation or conflict of any mental kind therefore reveals an opposition of desires or urges. The dissociated or reflected impulses are forced down into a level of the mind from which they can exert an influence on behaviour, but they cannot come directly and nakedly into consciousness. A barrier, which only hypnosis or some such procedure as the analysis of free-associations can pierce, cuts them away, unlike the temporarily submerged elements of the pre-conscious which may at any moment rise into thought.

But there is another aspect of the unconscious, which though often touched on by Freudians, is not methodologically differentiated. That is the totality of experiences during the infantile years before speech is mastered. Psycho-analysis has drawn on this period to explain the primary parental attachments and to discuss certain 'component instincts'—by which it means certain basic character-formations which develop early in connection with functional acts (eating, excreting, etc.) and muscular tensions. These components, it is argued, can develop through displacement and sublimation, or reaction-formations, into strong personal attitudes or habits.[30]

There is a certain interest and value in these expositions, though the whole matter has been oversimplified and treated in

[29] Flügel (a) 35; E. Jones (a) Ch. 2.

[30] See Tables in Flügel (a) 110; E. Jones on anal-eroticism (b), etc.

rigid narrow terms. But underlying them there is to be found the real problem of the development during those crucial years, when the tremendous creative achievement of grasping speech is carried out. Clearly, in the process of grasping speech and the primary elements of the human tradition, the psyche goes through a very engrossing and stormy experience. An enormous activity of concentration is carried through successfully, during which the primal organic experiences are controlled and translated into the instrument of human expression.

In such an upheaval, it is inevitable that the primary levels of experience consist of simple patternings in which various aspects of organic experience and pressures, pang and release, rhythm and chaos, satisfaction and fear, expansion and contraction are powerfully but simply co-ordinated.

Here I suggest lies the fundamental aspect of the unconscious, these primal organic patterns on which all future expression is dependent. They can never be outgrown; for they are the basic organic experiences moving into human articulation. They represent the vitalising forces, the ultimate organising forms, on which our psychic life depends.

If we get ourselves caught up in some insoluble tangle or conflict, then our conflict or self-division must affect these organising forms. In the case of neurosis the division penetrates deep and immobilises the powers of renewal in the organism. In this sense, repressions can get mixed up with the fundamental unconscious; but to identify the unconscious with repressed impulses is to slander life at the root.

These deep creative unconscious levels of organic experience (in a tension and resolution of inner and outer, social and personal) are drawn on by all valuable art-activity. Thus, Freud tried to use the similarities between daydream and creative fantasy to argue that imaginative work is the expression of thwarted or repressed conflicts.[31] Roger Fry, denying that wish-fulfilment in this sense was central in art-expression, made a statement which is fully in accord with the thesis I have sketched above. He said:

> In art there is, I think, an affective quality which lies outside that (of wish-fulfilment). It is not a mere recognition of order and inter-relation; every part, as well as the whole, becomes suffused with an emotional tone. Now, from our definition of this pure beauty, the emotional tone is not due to any recognisable reminiscence or suggestion of the emotional experience of life; but I sometimes wonder if it nevertheless does not get

[31] Freud (a) 80f.

its force from arousing some very deep, very vague, and immensely generalised reminiscences.

It looks as though art had access to the substratum of all the emotional colours of life, to something which underlies all the particular and specialised emotions of actual life. It seems to derive an emotional energy from the very conditions of our existence by its revelation of an emotional significance in time and space.[32]

IX

And so we come to Jung. For Jung has intuited these primal organic patterns which Freud omits from his concept of the unconscious, but he has made an idealist statement about them. Thus he invents a Collective Unconscious from which he may derive these organic patternings, common to all men (though articulated and developed further along different lines in different historical situations). This Collective Unconscious is merely one more of the idealist fantasies such as the Creative Elan or Emergent Deity which have been worked out to supplement a mechanist concept of movement and change. Rightly, Jung recognised that there was a level in the unconscious which was quite unfathomable to introspection and which was the diametric opposite of Freud's repressions. But, in his reaction against the mechanist elements in Freud, he abstracted this creative organic aspect and declared it the life-energy which in a spontaneous movement to expression generates the hero-figure of myth and the potent symbols which, appearing in individual fantasy, break down the bounds of personal consciousness and make the *I* a living part of the creative *We*.[33]

All the deep creative elements in art, poetry, or music, Jung thus attributes to the stirring in the mind (within or beneath the conscious currents) of unconscious forces which he calls Primordial Images or Archetypes. He strives to give a scientific aroma to this statement by describing these images as 'psychic residua of numberless experiences of the same type'—i.e., experiences which have happened not to the individual but to his ancestors, and which are inherited in the structure of the brain as *a priori* determinants of individual experience.

Jung's own statement runs thus:

Yet this personal unconscious (of repressions) appears to rest upon a deeper layer that does not derive from personal experiences and achieve-

[32]Fry (a) 19. See Armstrong, 135. Relate this § viii back to the problems of Form discussed above in Ch. 6.

[33]Jung (a). His Collective unconscious raises more issues of organic 'prehension' than are here treated.

ment but is inborn. This deep layer I call the *collective unconscious*. I have chosen the term 'collective' because this part of the unconscious is not individual, but universal; in contrast to the personal psyche it has contents and modes of behaviour that are more or less the same everywhere and in all individuals. The collective unconscious, so far as we know, is self-identical in all Western men and thus constitutes a psychic foundation super-personal in its nature, that is present in everyone of us . . . .

The contents of the personal unconscious constitute the personal and private side of psychic life. They are chiefly the so-called feeling-toned complexes. The contents of the collective unconscious, on the other hand, are the so-called archetypes.

The term 'archetype' derives from Saint Augustine, and deals with 'ancient' or, better still, with primordial types—that is to say, with images impressed upon the mind since of old. .

Primitive tribal lore treats of archetypes that are modified in a particular way . . . changed into conscious formulas that are taught according to tradition, generally in the form of esoteric teaching . . .

Another well-known expression of the archetype is myth and fable. But here also we are dealing with conscious and specifically moulded forms that have been handed on relatively unchanged through long periods of time.[34]

It will be clear that Jung is dealing with an important psychic reality, but he gives the wrong explanations. The universality of the primary symbol and images which he deals with is derived from the fact that the infantile levels necessarily show very slight personal differentiations. Therefore place and time are comparatively indifferent to them. That is the explanation of the fundamental element common in all art-expression of any period.

Jung's extreme idealism, which, recognising the integrative aspect of art and myth, often rationalises them in superficial terms, must not blind us then to the great importance of the issues he raises or the genuine nature of his material. He provides us with the broad integrative attitudes, the sense of organic unities, into which we must fuse the analytic findings of Gestalt and Freud. Then his unity-intuition will be saved from too simple application. We must relate it to the Gestalt-processes of articulation and the Freudian process of resolution at work ceaselessly restoring the equilibrium of the organism and furthering the extension of symmetry or stability. Its organic

[34] Jung (c) 52f. For Jung an archetype 'designates the psychic content that has as yet been subjected to no conscious treatment and so represents an immediate, psychic actuality.' 54.

bases will be seen as one with social process in the living unity of the self, and a unitary psychology is at last possible. But to achieve it we need more than a formal synthesis of Freud, Jung, and Gestalt; we need the working-out of unity in life itself, in social struggle and individual participation. Then, and then only, we shall see how the resulting psychological instrument enables us at last to work out fully the problems of dissociation and integration that are fundamental in all Marx's work—in his whole critique of Capitalism and of the revolutionary forces that will redeem life from capitalism's crucifixion.[35]

A. BASIC SYMMETRICAL PATTERNS IN ART AND ETHICS

I

In this note I shall briefly review some inquiries into the formation of speech and ideas in children.

The infant does not learn to speak through imitation.[36] It starts with gestures (not used in the sense of language gestures) and laryngeal expressions with an instinctual basis. Articulation begins about the second half year—an activity based on the establishment of circular reflexes between the sound of the syllable and the response of speaking it. The vocal synaptic resistance is lowered or overcome simultaneously with the auditory stimulation.[37]

In short, the activity of learning to speak is patterned activity. The process is one of organically building up the mechanism of speech.

An individual cannot imitate anything for which he has not already established some mechanism, either inherited or learned. Hence, if such a structure is not inherited, then it is the learning or inquiring of this ability which interests us, and which imitation does not explain . . .

This process seems to be one of the touching-off of previously acquired vocal habits by the auditory stimuli conditioned by them. The child in

[35]Then we shall see how the understanding of conscious and unconscious factors in individual and society is bound up with Marx's analysis of the abstract and the concrete factors in production. That analysis has been totally misunderstood by most critics of marxism (e.g. Popper) who see in it ponderous remnants of German idealism. Marx's terms, of course, show signs of his development out of that idealism; but their essential and subtle truth derives from Marx's unitary outlook, which for the first time in history grasps at the fullness of human life with all its internal contradictions or a-symmetries, and sees social and psychological, economic and cultural, in a single focus.

[36]Allport, 239; Thorndike, Ch. viii.

[37]Markey (b) 386 and 396, and (a) 30f. Allport, 178ff.

his period of development, as far as can be observed, does not imitate the sounds spoken by another, but responds with the sound for which the word by similarity or otherwise is a sufficient stimulus.[38]

The evidence has been summarised[39]: (i) If vocal responses are circularly fixed, with the sound of speaking them serving as stimulus, reiteration of one syllable would be expected; and that is what happens. (ii) Only sounds already pronounced in random articulation can be evoked by the speech-sounds of others, those which have had a chance to be circularly fixated as ear-vocal reflexes; and evidence supports this. (iii) The central nervous system has mechanisms adequate for the circular fixation of vocal habits, leaving the cortex out of account. (iv) Deaf-mutes can articulate only in the manner of the random infantile period.

In the actual development the extension of the circular responses is bound up with the child's relation to his environment. The pattern is built up by a complex series of identifications. 'These reactions of the child which differentiate its own verbal stimulus as being the same or similar to that of the mother and at the same time which give it validity as its own vocal stimulus give the vocalisation the character of a symbol.' Speech is thus a gestalt created by a resolved tension between organism and behavioural (social) field: 'The first moment that such an integration occurs in the behaviour of a child must be a startling one. This flash of co-ordination, facilitation, inhibition, summation, and integration of responses which occurs in the behaviour-mechanisms would be a novel and extraordinary experience. Of course, it had a gradual development in genetic growth.'[40]

Speech thus results out of the continual assertion of a symmetrical pattern uniting organism and environment and restoring emotional stability. The physical symmetry-pattern develops through integration with the emotional situation.

II

Sylvia Anthony, dealing with the child's discovery of death, examines the basic fantasy-forms.[41] She finds in the pattern a

[38]Markey (a) 31.
[39]Allport, 185.
[40]Markey (a) 35f. 'The period up to the point at which the child's own stimulus is effectively substituted for the other's stimulus has been made fairly clear by other writers. The point which needs further clarification here is this process of social interaction by means of which the child does thus effectively make the interchange.'
[41]S. Anthony, 47ff. Similarly all the quotations here in §ij-iv. For the oscillatory

triadic basis. Death is commonly considered the result of aggression; and the fantasy takes an 'oscillatory' form. The act of aggression is committed; its nemesis comes in a retort of the same aggression; the child makes reparation and all is well. In a typical case, a boy is cruel to a bird, takes its nest, and drops the eggs. His mother told him he was like a giant to the birds. That night he dreamed a giant took him away. He cried out to his mother, 'and he never did such a cruel thing again'. He wished that animals would like him and that he'd never break an egg again. If he got a lot of money, he 'had a bird-haven, and a beast-haven, and people came to buy eggs from the creature-haven, and one of his hens laid a golden egg . . . pure gold, and he could spend it.' 'What did he spend it on?' 'On more hens.'

Anthony says:

> The impression is given that the idea of retaliation itself, primitive as it is, develops from a manner of thought still more general and primitive. The manner of thought is an oscillation of attention, by which a whole fantasy or thought-complex is alternatively seen in primary and then reversed aspect, and then again in primary. Thus, a mother loses her child by death, and then the mother herself dies; and then the child (or a substitute) is alive again; and then the mother comes back too.

This oscillation of attention in fantasy has similarities with the oscillation of attention in laboratory-tests when someone fixes his eyes on a pattern of dots (or figure in ambiguous perspective) and finds that after a while the pattern changes, independently of will, goes through one or more such changes, and then returns to the original phase. And this will go on as long as one stares.

In the fantasy-oscillation, however, each phase is affected by the previous phase. The oscillations gather cumulative force. But in both fantasy and visual effect, the completion of the second phase brings the adjustment of a balance which the first phase has upset. In the visual experience, the readjustment is physiological; in the fantasy, it is ethical, emotional.

In the phase-changes the figures are mentally identified. But in fact it may be a desire for identification which forms the pattern and sets it oscillating.

Thus, the child desires to take the father's place, and have the mother for his wife. In fantasy he identifies himself with the father; their positions then begin to oscillate. But with each oscillation, new emotional complica-

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pattern in psycho-analytic Recognition (and Tragedy) see Wertham's formulation of the 'catathymic crisis'.

tions are carried forward from the last phase. So guilt arises subsequently to the identification of the child with his father and a complete oscillation of the pattern; the guilt is compounded of his desire for his mother seen from his point of view as child and from his point of view as father.

The process has elements common to the development of all forms of meaning—identifications based on desire leading to 'oscillations of attention and aspect and a continually widening synthesis'. But here there is a special element, since the idea of death has such utterly different connotations when attached to the self than when attached to others. Hence the importance of this fantasy-pattern in the whole development of personality and of moral responsibility.

III

This is how it works out. The law of talion[2]—tit-for-tat, an-eye-for-an-eye—is a basic moral law; and it does not originate from some abstract notion of justice or responsibility. It originates from the symmetry-pattern extending in the social or moral sphere. Its range runs 'from the impulsive returning of blow for blow that may occur among animals at play, to the vicarious sacrifice symbolised by the Eucharist.' It seeks to redress a balance; to reassert stability by a 'symmetry-pattern. 'It presupposes a supporting framework which includes both parties and it is itself a function of the whole, concerned with the maintenance of the whole in equilibrium. The liberty, equality and fraternity of man are all concerned in retaliation. Retaliation can be no function of the subservient, and only those equal in spirit and impulse can gain in grace by voluntarily refraining from it.'

This symmetry-pattern works out in an ever enlarged sphere of reference. The full oscillatory movement, in terms of the complex social and personal factors involved, moves to further conclusions and acts. The social framework is ultimately built up out of a series of identification-acts.

[2] The process of oscillation which retaliation represents in the legal-ethical field involves reversability of the functions of its members, as automatically as the figure in ambiguous perspective presents first one aspect of itself and then another. This involves for each participator a fundamental duality of parts, and mental conflict. Each feels himself at once avenger and victim. For in each mind the succeeding phases leave their cumulative deposits of emotion, and no attitude completely succeeds the ' ' or reverts to a form identical with an earlier one.

It is then because the pattern forces the wrong-doer at some point to realise himself as the sufferer from his deed, that he offers reparation. Again no abstract moral power operates, but an organising pattern which includes both visual and emotional, organic and social aspects. The child 'represents both wrong-doer and wronged within himself, with an alternation similar to that which maintains primitive society.' But since these alternations are not simple and discrete, but cumulative, the result is not an endless tit-for-tat. Revenge yields to 'a system of reparation which has its foundations not in forcible imposition, but in the deeper social sense, and hence the acquiescence of the wrong-doer and the wronged.'

Thus we see that as fantasy oscillates, and accumulates from each phase emotional attitudes and identifications which are carried over to the next, new syntheses arise and more comprehensive contrasts appear. Simple antagonisms at first work themselves out in blow for blow, until the complications of identification make victory or loss for either into victory or loss for both; and then these alternating phases are seen as a single phase of conflict and killing, and another phase appears, to contrast with the first one as a whole. Mutual-murder-and-hate gives place to mutual-love-and-resurrection.

IV

Sylvia Anthony goes on to show how this basic pattern (the oscillation of symmetry-identifications) in connection with the concept of death leads to a number of very important developments. Thus the death-concept becomes charged with emotional power through being brought into vital association with unconscious memory-complexes relating to birth (and pre-natal life) and to impulses of hostility and aggression in general. At this point, in the death-aggression complex, animals play a large part in fantasy-life, since they seem to be permitted victims of human aggression by attack and eating.

The realisation of death is integral in the work of detachment and re-unification of self and society, self and nature. The effort to understand age and death is closely bound up with the growth of interest in numbers and the sense of time-divisions. Thus, the whole advent of a conscious logic and a rational attitude, and the final dominance of the scientific as opposed to the magical outlook, is at every moment connected with the developing concept of death and its background resistances and identifications.

Where the hate-aspect of erotism has been securely repressed or transformed, the discovery of the impotence of the individual to avert death from the loved person proves to him that he is not 'omnipotent'—that he cannot effect reality by a pure wish-fulfilment, and that natural law prevails over human will. This discovery, while definitely restricting the sphere of the magical sense and its fantasy-satisfactions, also releases the individual from the guilt-sense which the oscillatory identification-pattern keeps inflicting on him at death or disaster in his environment.

The first step in the development of logic and science is thus the dominance of love in consciousness. The second step is the recognition of the natural inevitability of death. The third step is the direct association of death with the self. 'In the attempt to avoid this association the child proceeds from transduction (or induction based on ubiquity of causation) to true induction and deduction based on the uniformity of natural laws.'[42]

V

The oscillatory pattern described by Anthony can be found throughout folktales and myths in a large number of basic formulas: attack and reprisal, the loss and return of the hero, humiliation and triumph, and so on. The whole primitive method of story-telling is based on this method, in which the emotional movement is closely related to a continual direct oscillation of symmetrical patterns. Thus, among the New Hebrideans, 'Songs are a form of story-telling. Words are a native art with an intricate circular pattern.'[43]

And it has been held that the essential steps in melodic development occurred through circular symmetrical formations—starting from a nucleus of two notes, *fg*, to a series *cfgc*: at first with only the extremities fixed, and then gradually on through the pentatone *cdfgac* to the series which fixed tones

[42] One very pretty piece of dialectical exposition is that which shows how at certain phases of emotional crisis the child needs a 'negation of reality' to give it the extra courage needed to go ahead and overcome fear, deny the negation, and come out into full reality. (See Anthony, 186; Ferenczi (b) and S. Freud (h)).

Another basic primitive symmetry-concept is that grand-parents dwindle as children grow, so that children are grand-parents reborn: see Anthony, 169, and E. Jones (b).

[43] T. Harrisson. 352.

and semi-tones strictly along the lines of consonant fourths and fifths.[44]

To trace the symmetry-pattern further would need a volume —or volumes; but I may point out as *direct* embodiments of the oscillatory pattern described above, the structure of Greek tragedy and of the Pindaric Ode (with its triadic form), the sonata-form in music, Hebraic parallel verse-form—and in fact, rhyme. All artistic form is based, if successful, on some variation or other of this basis.

The importance of Anthony's formulation is that it shows in a single process the basic formative element of both art-form and ethical emotion or idea.

B. WORDS, WHOLES AND MEANING

I

At several points (e.g. Ch. 3) I have laid emphasis on the Whole involved in the act of thinking, in the act of creative expression, and so on. This Whole involves an intuitive element, but cannot be reduced to it, as Croce tries to do. In the same way, when I spoke of a great poet like Shakespeare as having an intuition of the whole movement of his society, I did not mean that this intuition existed in any Crocean abstract space of the Spirit. It is made up of the totality of the poet's experience, which includes all his intellectual judgments and analyses as well as his sensuous experience, his conscious and his unconscious, all his knowledge of conflict and union both directly and indirectly. It is no mysterious holistic or transcendental awareness, but proceeds on the gestalt principle.

With these points kept in mind, I should like to draw attention to a statement by Marx and another by Lenin, which help considerably to make clearer what I was trying to say in Ch. 1, §vi-vii, about the artist in his work grasping something of the total movement of history and therefore being in no sense reducible to a class-element. (And what is true of the artist is of course true of every man. One speaks of the artist thus because he has left the concrete evidence of his spiritual and social living.)

[44] Marius Schneider. In one of the Aristotelian problems we are told that all good melodies return often to a note called the *mese* (middle). In the Dorian mode, for ex., this note is the fifth descending or fourth ascending. Melody is thus for the Greeks a complex oscillatory symmetry-pattern. (Mountford (a) 167; (b) 33; Macran, 66.)

Marx, in the *Communist Manifesto* (I) speaks of sections of the upper classes being from time to time 'precipitated into the proletariat' whom they supply with 'fresh elements of enlightenment and progress'. As dissolution increases, the workers are joined 'in particular (by) a portion of the bourgeois ideologists, who have raised themselves to the level of comprehending theoretically the historical movement as a whole'

Lenin carried this idea much further and stated with the fullest possible precision that Socialism was a creation of the bourgeois intellectual. He is discussing the relation between spontaneous action (action which results from strong stimulus but is unaware of the full bearings of either stimulus or response) and consciousness, and he emphasises with all his might his belief that Socialism can never proceed out of economic or social developments without the directive aid of men who have grasped the theoretical implications.

We said that *there could not yet be* Social Democratic consciousness among the workers. This consciousness could only be brought to them from without.' The history of all countries shows that the working-class exclusively by its own effort, is able to develop only trade-union consciousness, i.e., it may itself realise the necessity for combining in unions, for fighting against the employers and for striving to compel the government to pass necessary labour-legislation, etc.

The theory of socialism, however, grew out of the philosophic, historical and economic theories that were elaborated by the educated representatives of the propertied classes, the intellectuals. According to their social status the founders of modern scientific socialism, Marx and Engels, themselves belonged to the bourgeois intelligentsia.

Similarly, in Russia, the theoretical doctrine of Social Democracy arose quite independently of the spontaneous growth of the labour-movement; it arose as a natural and inevitable outcome of the development of ideas among the revolutionary socialist intelligentsia.[45]

He conducted a steady and consistent polemic against the advocates of spontaneity.

All those who talk about 'exaggerating the importance of ideology', about exaggerating the role of the conscious elements, etc., imagine that a pure and simple labour-movement can work out an independent ideology for itself, if only the workers 'take their fate out of the hands of the leaders'. But this is a profound mistake.[46]

[45]Lenin (a) ii, 53 and 61.

[46]He acclaims as 'profoundly true and important', Kautsky's statement against the revisionists who 'believe that Marx asserted that economic development and the class struggle create not only the conditions for socialist production, but also, and directly, the *consciousness* of its necessity.' (Kautsky, 79).

in logic, mathematics, and philosophy, he tries to clarify many aspects of these subjects. Wittgenstein's system thus made the gesture of clearing away much lumber ; but it reposed on the same abstractions and divisions as Russell's scheme. In fact, it is much further away from reality than the despised metaphysicians.[54] Thus, since Wittgenstein 'identifies "the totality of true propositions" with the totality of natural science, he excludes all those hypotheses from "the sphere of natural science" which are not true. And since we can never know of an hypothesis whether or not it is true, we can never know whether or not it belongs to the sphere of natural science'.[55]

III

In all this type of thinking we find the belief that by knowing the forms or abstractions of thinking we know a superior reality. The subjectivist basis leads to this glorification of the abstracted thought-symbols or relations. Inevitably it seems to the Positivist a 'mysterious, inexplicable fact that our thought has this power to reveal to us authoritatively the nature of objects of mathematics or logic we have never observed.'[56] Such an attitude is highly metaphysical, treating mathematics as objects.

One and all, these thinkers evade the real problems of scientific method. They try to escape them by an abstract apotheosis of the relations within the *result* of the scientific act. Hence, their deification of definition.[57] They mistake the end of the road for the start; they start from the abstract instead of the concrete. Foley points out in their work 'the fallacy of hypostatisation' which gives to objects and events a precision in words they do not in fact possess.[58] Hawkins points out that

[54]Popper (a) ii. 284, 'The anti-metaphysical theory of meaning in Wittgenstein's *Tractatus*, far from helping to combat metaphysical dogmatism and oracular philosophy, represents a reinforced dogmatism that opens wide the door to the enemy, deeply significant metaphysical nonsense, and throws out, by the same door, the best friend, that is to say, scientific hypothesis.' See further Popper (d). Wittgenstein thus opens the way to Heidegger's Existentialism, and ultimately to Sartre's metaphysic of the Absurd. (Heidegger: 'Question and answer concerning nothingness are in themselves equally nonsensical.' Poppr (a) ii, 301.)

[55]Popper (a) ii, 283. Caudwell comments, 'Such philosophers think consciousness is contemplation—a limpid image of reality. In the same way they think language exists to be a passive photograph of the universe,' 218.

Cf. H. Gompers, 33-5, on the naïve uncritical idea underlying the huge critical edifices of these purists.

[56]Ayer (a) 92.

[57]Note the connection with an abstract art-for-art's-sake aestheticism or the economics of Marginal theory (with emphasis on Consumption). It is the Product, not the Process, that is considered

[58]Foley, 491.

in symbolic logic such as Moore's the real problems (of implication and inference) are evaded by a definition of material implication which is 'an act of philosophical piracy'.[59] Craik remarks of the whole attitude which attributed error and lack of philosophical solution to inexact definition and use of terms or to illegitimate extensions of (or inferences from) them:

> This surely involves an *a priori* assumption—that the nature of the real must accord with our exact definitions. The remedy may lie in seeking to state the real exactly, rather than in seeking 'internal' exactness in definition.
>
> At first this may take the form of a claim that definitions, subjectively laid down, have objective validity with regard to an external, independent world; but the difficulty of showing how they can have this validity led Kant and all phenomenalists after him to claim instead that the real was as narrow as their definitions. Subjective definitions, in other words, have objective validity only because the supposedly objective is merely what is described by those subjective definitions! Admittedly the phenomenalists give a somewhat more sophisticated statement of their position, and evade all questions as to where sense-data exist, what status they have, or how they are related to each other and to us; but in essentials the answer is as above: objective validity simply means subjective validity for them.[60]

In fact, borrowing a turn of phrase from Whitehead, one may assert that the whole school is based on the fallacy of Misplaced Objectivity.

IV

Some of this work has of course had limited value in clarifying certain types of problem or providing a shorthand system of description.[61] But its main intention is self-frustratory. It seeks to find a ready-made cut to universal knowledge instead of facing out the hard work in developing the methodology of science. It seeks, in Carnap's terms, to show how the whole of scientific activity can be organised into a single system based on uniform principles.[62]

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[59]Hawkins, 50.

[60]Craik, 17f.

[61]E.g. Woodger (b). Cf. Haldane's suggestion that logistic will 'only work for materials that has certain highly abstract properties, which are rather less frequently and much less completely exemplified in the real world than logicians would like us to believe,' J. B. S. Haldane (b) 43.

M. Johnson shows the familiar flaw: the attempt to build a theory of science as a logical construction out of *sense-data*—truth a 'coherence between communicable patterns of measurement.'

[62]Carnap (b). In (a) Carnap makes a study of formalised language—the theory of scientific languages in general and the nature of inference within them. (For

But this is to invert the way in which scientific method works. The unity must develop as part of the shifting skein of emerging problems. Thus Love says:

> The calculus was not developed by its first founders in accordance with logical principles from precisely defined notions, and it gained adherents rather through the impressiveness and variety of the results that could be obtained by using it than through the cogency of the arguments by which it was established . . .
>
> Many, perhaps all, of the mathematical and physical theories which have survived have had a similar history—a history which may be divided roughly into two periods: a period of construction, in which results are obtained from partially formed notions, and a period of criticism, in which the fundamental notions become progressively more and more precise, and are shown to be adequate bases for the constructions previously built upon them.[63]

That is, it is some time before the activity detaches completely abstract forms or definitions. It begins in a condition semi-fused with other movements of the mind—ultimately with the whole movement of the self (which includes and is included in the social field). And only gradually do the more purely analytic aspects consolidate. Then a new total movement starts the process off again.

These systems (except in so far as they contribute to clarifying the grammar of science) are trying to do at a blow the job which has to be done by a union of unitary dialectics and steady experimental investigation. They try, in short, to supplant the required methodology of modern science by a metaphysical structure.

V

A similar dilemma is brought about by the various writers on Value and Meaning. In Chapter 6 I glanced at the confusers of the problem of Value. An identical frustration appears in many theorists on the problem of Meaning. If you abstract Meaning, you will find that it is separated from concrete process and you won't find any ways of getting it back. The only way is to wipe out everything you have done and start all over again

uses, see Woodger (b) 15.) Carnap throws light on the method for avoiding inconsistency in a definition-using language, (a) 67. His method is partly from Tarski, who has an 'absolute' or 'correspondence theory of Truth'. Despite virtues, all these attempts fail to grasp the concrete unity of process: hence Carnap's plea, (a) 320, for a unitary attitude is of little avail.

[63] Love, 535.

with a method that grasps something of the totality of concrete process.

Thus Richards and Ogden in *The Meaning of Meaning* are deluded from the outset by the belief that definition is somehow more real than reality, so that precise definition must yield the clue of Meaning. The concrete living unity of the stream of language is something they have never even guessed at; the roots of meaning in a soil both scientific and artistic, the soil of experience, they have never touched.

As a result, they are absolutely rigid under the spell of those verbal ghosts of the physical sciences, which today make up practically the whole meaning-system of so many European minds.

This may seem a strong expression; yet surely nothing but a kind of enchantment could have prevented two intelligent people who had succeeded in writing a treatise some four hundred pages long on the 'meaning of meaning', from realising that linguistic symbols have a figurative origin; a rule from which high-sounding 'scientific' terms like cause, reference, organism, stimulus, etc., are not miraculously exempt!

That those who profess to eschew figurative expressions are really confining themselves to one very old kind of figure, might well escape the ordinary psychological or historical writer; it usually does; that it should escape the specialist in Meaning is somehow horribly tragic.[64]

C. A NOTE ON EXISTENTIALISM

I

Existentialism is the idealist theory of Existence. Idealism proper is a theory of Knowledge; and as background in the past has had various practising religions. Existentialism in its modern form is the attempt to produce a philosophy capable of replacing religion, or of providing out of idealist method a new vitalising force for religion. To grasp this point we must look back to its origins in the later 18th century.[65]

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[64] Barfield, 140. Note their prim horror at Bréal: 'It is impossible thus to handle a scientific matter in metaphorical terms,' *ibid*, 5.

Pillsbury, 85-7 points out that Meaning is integral at every moment of perception. Rignano (83, 207) argues that mental process 'relies on the solid ground of the real in each phase of its development.' Goldstein (a, 495, and b, 1-7) points out that language lives only in 'the ensemble of life's activities.'

[65] I owe the leading lines to Henri Mougin throughout, also Slochower (a) and Lenin.

Kant had produced his great scheme of objective idealism; in which he uses the 'transcendental subject' (opposed to the 'empirical self') as a term required in his description of the forces unifying consciousness. This subject is, in Kantian idiom, a necessary element or condition of unification, but in no sense can it be abstracted. It is not an object. If we take it alone, we are taking a condition of experience for a reality in itself. It is a function of knowledge, and cannot do what the subject of concrete activity does.

But the romantic thinkers who were seeking to found a religious philosophy of existence discovered in this subject what they needed to give a transcendental character to experience, to personality. Thus, Fichte removed the conditional aspect, and identified existence and the activity of the ego. Two contradictions at once result. Consciousness is defined in terms of an idealist dialectic (by the opposition of self and not-self; the self set running after its own activity); and an abstract ego is projected, a subject which is made the cause of itself and which exists by its own spontaneity prior to the dialectic. The self is defined at the same moment as absolute and relative, infinite and limited. Though infinite, it grasps itself as such in the conscious activity by which it displaces its own limits.

Thus dialectics is defined as the Play of the Limit between self and not-self, an endlessly shifting and paradoxical frontier of union and separation. Fichte indeed is trying to pass from the transcendental to the existential subject by a construction of rational form; but in Schelling we meet a different emphasis. Here the subject appears as pure intelligibility, and the key-question is posited: Why does the absolute I give itself limits at all? Schelling says the reasons are two. 1. Impersonal—the spirit needs to manifest itself as a finite individual; and 2. Personal—I am thus I and not someone else. Both these concepts are necessary, since we cannot conceive existence without them. They are also unintelligible to our reason. So existence involves basically both unintelligibility and absurdity.

Hegel opened his *Phenomenology* with an attack on these two thinkers. He accused Fichte of 'the naïvety of the void in knowledge'. The absolute I of Fichte, opposed to the empirical I as to non-being, is cut off in abstraction; when it seeks to pass from the absolute to the dialectical plane and to rejoin its own activity, the act is fictitious. For in it the subject sets itself up as the object. Hegel goes on to attack what we now call historicity in its subjective form: the I in the pathos of the here-and-now.

II

I shall not here examine the full working out of the existential philosophy which already in Fichte and Schelling has developed its typical positions. The main and inescapable contradiction lies in the use of the existential subject as both a relation and an absolute being; the continual jump from the absolute ego to the existential subject and back again. But the purpose behind the thinking has been successful; the contradiction is after all precisely what these thinkers need in their effort to define the complex conflicts of the self in movement. Objective idealism may be issuing in an existentialist subjectivism (which has to keep on struggling hard not to fall into simple solipsism), but it sketches in the process a form of logic which avoids the idealist aloofness and grapples with the immediate stuff of experience. For the dialectic of the limit at once leads on to the heart of the emotional problems of fear and desire, union and separation, truth and deception, good faith and bad faith, stability and instability, with which men deal in daily life. It is then not sufficient to point out the idealist flaw in all existential theory; we must go on to find what is of value in this approach which for all its solipsistic dangers affects to emphasise always the concrete.

The objective idealist elements in Kant issued in the Hegelian system, which tries to use an idealist dialectic to grapple with history as a real development. Hegel's work at one and the same time provided an enriched basis and method for existentialism, and the forms of thought against which it must fight. The existential subject, based in the 'void of knowledge', cannot accept history as revealing a progressive structure of development, even an idealist one; but in fighting against the Hegelian categories and their application it willy-nilly took on a deepened content and a fuller texture.

III

Throughout it has had to work on the Fichtean concept of the changing limit between self and not-self (ultimately the *néant*, nothingness) and the Schelling notion of the absurd. Schopenhauer early expounded much of the emotional content. His Will, being all, must feed on itself and feel the terror of the void; suffering becomes the key-fact in existence and the universe is absurd in its utter opposition to our rationality. 'Will, an-

talking about something very real, which we cannot afford to ignore. That was what Nietzsche meant when he said that we must fight Nihilism by embracing it, transforming it from within; for by no other way could the new integration be reached. That particular form of struggle is not the whole struggle, but it is an essential part of it.

But by focussing attention on moral issues of freedom, responsibility, union and separation, existentialism (under many names) has done more than reflect a temporary situation of the spirit. (All temporary situations, fully plumbed, reveal an eternal situation—i.e. a situation humanly recognisable at any stage of development.) The emphasis on immediacy may reside on a deeply fallacious philosophy and may lead to all sorts of unbalances—as in Heidegger, who provided much ideological support for Hitler.[70] But there is a problem there, and we must face it. Creative energy involves the immediate, the intuitional, as well as the analytic and techtonic. We cannot brush the issue away as Hegel tried to do by saying that there is a logical fallacy involved: that the real subject rests on the absence of the immediate, on the fact that the Now is the 'negation of the preceding Now'. There is more to it than that, though we cannot therefore like Kierkegaard simply turn away from the Hegelian structure as fake. The problem is still that which Nietzsche stated, to unite the philosophy of development with that of existential values. The key must lie in a fully dialectical instrument of psychology.

[70]Cf. Gentile whose inner dialectics of thought-thinking and thought-thought led to a concept of Pure Spirit identified with pure act, identified with the Fascist State.

CHAPTER EIGHT

Views of History

I

THE UNITARIAN APPROACH to history enables us to settle certain vexed problems by seeing simply that they exist on account of incorrect formulations. Outstanding is the whole question of the relation between the (economic) structure or substructure and the (social or cultural) superstructure. Stated like that, it cannot be satisfactorily settled. The terms *structure* and *superstructure* are hopelessly question-begging; they assume what is to be proved. They are static and force on the mind a spacial material relationship which distorts the issue. For what we are in fact trying to solve is the relationship of *two aspects of human process*, economic and cultural. It is productive activity and cultural activity that concern us, not 'structures'. Only by extreme abstraction can we extract one aspect of human life as a structure and set it over against another aspect as a structure.

The real problem is how culture and productivity are related as aspects facilitating the total human process. As Marx said in the passage cited at the end of Chapter 3: 'The labour-process ends in the creation of something which, when the process began, already existed in the worker's imagination, already existed in ideal form.' That sets the key of the problem. How does the cultural or spiritual process facilitate productivity? and since the creation of the 'ideal form' is basic to the simplest productive act, what is the relation between direct economic activity and general cultural activity within the human whole? how far is the 'ideal form' which is translated into techniques and productive act, dependent on the artistic and scientific activities which most deeply stimulate the human power to build and project 'ideal forms'?

There are the real problems, which are apparent at once if one tries to grasp the dialectical implications of Marx's statement.

II

It would then be perhaps best to follow this breaking-down of an incorrect formulation with some consideration of the way

in which that incorrect formulation has acted. For this purpose the work of Plekhanov will amply serve. Plekhanov may have served a certain purpose as a polemical vulgariser of Marxist concepts; but his day is long since over, and he can now only act as a dangerous distorter.

Thus, in *The Materialist Conception of History* he is attacking Labriola and others. He attacks the Theory of Factors, and correctly remarks that any amount of separate factors, however well analysed, will never add up to the real movement of history. He rightly wants a concept of unity.

> The progress of natural sciences has led to the theory of the *unity* of (physical) forces, to the modern theory of energy. In just the same way, the progress of social science was bound to lead to the replacement of the theory of factors, that fruit of social analysis, by a *synthetic view of social life*.[1]

Ignoring the unfortunate phrase 'synthetic view', we then ask how Plekhanov interprets the concept of dialectical unity in history. We find him making a series of mechanist statements in which real dialectical relations do not appear. 'The productive forces at man's disposal determine all his social relations. . . . These relations naturally give rise to definite interests, which are expressed in law.' He goes on: 'Thus the law, the state-system and the morality of any given people are determined *directly* and *immediately* by its characteristic economic relations. These economic relations also determine—but indirectly and mediately—all the creations of the mind and imagination: art, science, etc.' There are more statements of this sort, but no effort to explain what is the difference between an immediate and a mediate determination.

We have only to set this brittle pack-of-card game with 'structures' up against Marx's statement that any analysis of labour-process must include origins in the imagination and that in carrying out the full process men develop their potentialities. Marx's words deal with processes, with the single stream of reality in which men act, imagine, and realise themselves in all their human fullness. But Plekhanov is concerned with an abstraction of passive relationships.

One example will suffice to show the shallowness of his method. Kovalevsky has described a custom among the Ishavs

[1] Plekhanov (a) 21, 28 etc. The whole work is a web of polemics against the 'Narodnik subjectivists, Mikhailovsky, Kudrin, etc.' His importance lay in that he was the first Marxist to set before himself the problem of cultural activity as his main theme.

of the Caucasus: women cut off their hair-braids when brothers die, but not when husbands die. Plekhanov cites this custom to attack Labriola's suggestion that symbolism is the final cause of many rites and activities. He declares that the important thing is to understand the relations symbolised, and that we must turn to the history of the family to understand why it is the brother's grave on which the woman makes her offering. Now, it is quite true that the brother-sister relations among the Ishays which the rite reveals are of interest and have relevance to a full understanding of the rite. But, methodologically, we must go on to ask the further question: What is the impulse behind the rite which makes the woman carry out this placatory or expiatory act? is it a substitute-sacrifice? what is its relation to other such placatory rites? and so on; till we have placed the rite in the right anthropological series and context. Its genetic meaning is not in the least affected by the particular social relations in which among the Ishavs it is found—however much those relations blend with the genetic meaning in an Ishav woman's experience. Inadequate as Labriola's theory of symbols may have been, he was asking the right sort of question.

III

Even less satisfactory is Plekhanov on *The Role of the Individual in History*.[2] First he argues that fatalism is not inhibitive of energy and initiative. Moslems and Calvinists have been fatalists, and yet they have left a great mark on history.

This argument falls in a cleft stick. It is relevant only if Marxism is fatalistic. And if Marxism is fatalistic, then it is all that its enemies say it is.

Next, he goes on to examine the part played by the individual in history. But all he actually does is to take various Great Persons, and to argue that if they had died prematurely or been different, the course of history would still have been fundamentally the same. Slight differences would have occurred, but the main trend would have been unaffected.

This whole approach is so riddled with mechanist fallacies that one hardly knows where to start in brushing it aside. Such a piecemeal atomistic approach to history leads nowhere except to a few sterile 'if's'. Of course if you abstract anyone,

[2] Plekhanov (b): again a network of polemical comments which may have had a vulgarising value against idealists in the Russian scene in 1898, but nothing else.

great or little, from the stream of history, you can ask the question: Did it really matter if he was there or not? did it really matter if he did some act or didn't? And you can only answer No. But this proves nothing whatever of the real relation of people to the stream of events in which they actively live. It is exactly like the game of the mechanical materialist who abstracts an act, and then says that whatever you chose to do you would have been determined. Bergson may have his vices as a thinker, but in *Time and Free Will* he at least showed the totally illegitimate nature of this sort of killing abstraction.

Before we can start answering Plekhanov's question, we must put the individual back in the life-process and understand his freedom (which involves his relation to necessity) in terms of his potentiality implicated in the productive act. The purposive movement of the *whole man* is freedom, as Marx surely pointed out with sufficient cogency.

IV

I shall now attempt to deal with various attacks which have been made on Marx, and to find out how aware they have been of his full position—that is, the position which emerges, not from treating one set of his statements as a dogmatic declaration, but from considering the whole movement of his thought in its historical setting.

First, K. Federn takes Marx's statement in the *Critique* about the Forces of Production, e.g. 'arrived at a certain stage of their development, the material forces of production come into conflict with the existing conditions of production. . . .' He asks what the Productive Forces are, and is able to cite Marxists such as A. Braunthal declaring:

> The materialist conception of history does not attempt to explain the development of the productive forces; this development explains itself; it is simply the ultimate fact.

Federn himself argues that no developments of any kind in the human sphere are possible without the action of mind. He comments:

> The question arises whether the intellectual forces of man belong to the productive forces or not. We do not see how they can well be excluded, considering that they are the sole forces which play an active part in the process of economic production. Yet, for this very reason, their mode of operation being different from that of all other forces, it would be difficult, to include them in the same category.

Marx and his followers do not seem to have paid much attention to this important question. Marx certainly did not include them among the productive forces mentioned in his theses, for in this case he would have had to change the latter entirely, and the whole theory would have crumbled. He and his adherents relegate all intellectual activities to the 'ideological superstructure'.[3]

This statement is made in idealist form: mind is declared the 'sole force' in production—which could only be done if production was also considered a mechanist activity in which mind exerts a transcendental force. But it would stand as a criticism of Marxism if Marxism did in fact cut mind away from production and relegate it to a superstructure. Marx certainly never had the least intention of such a relegation. Critics such as Federn rely on taking an isolated formulation by Marx, divorcing it from the full movement of his thought, and refusing to relate it to its polemical purposes (in terms of what I have called the Collingwood formula). If they do that, they can of course set up a case for Marx as an economic determinist.

But such an attack is making a total falsification of Marx's thought. To refute it, and to show the lines on which Marxism must develop, we have only to turn to the passages where Marx has stated with the utmost plainness that the particular economic forms, class-conflicts, etc., of any period take place within a larger process of man in unity with nature; for in this larger process Marx lays the whole emphasis on the imaginative and intellectual activities of man.[4]

I now turn to a subtler critic, R. Popper, who launches an attack on Historicism. By Historicism he means a theory which ignores the attitude of the ordinary man who 'takes the setting of his life and the importance of his personal struggles for granted', and which claims 'to survey things from a higher plane'. It 'sees the individual as a pawn, as a rather insignificant instrument in the general development of mankind.'[5] Nations, Leaders, Ideas or Classes become the real motive forces, and from their action are abstracted the Laws of Historical Development. By these laws the social scientist claims to be able to predict future developments and decide which political actions will succeed or fail.

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[3] Federn, 7.

[4] Where Marx speaks of Man he generally means man (in the full unity of his personal and social being) over against and within nature. When he speaks of Men, it is in a particular historical context, with emphasis on the forms of social differentiation

[5] Popper (a) I, 5f.

Popper denies this position and declares:

> But is there really no such thing as a universal history in the sense of a concrete history of mankind? There can be none. This must be the reply of every humanitarian, I believe, and especially of every Christian. A concrete history of mankind, if there were any, would have to be the history of all men. It would have to be the history of all human hopes, struggles, and sufferings. For there is no one man more important than any other. Clearly, this concrete history cannot be written. We must make abstractions, we must neglect, select. But with this we arrive at the many histories . . . [6]

The many histories, he thinks, which deal with varying aspects of history, can be written, and should be written. And though history has no meaning, we can give meaning to it. We can, for example, 'interpret the history of power-politics from the point of view of our fight for the open society, for a rule of reason, for justice, freedom, equality, and for the control of international crime.'

He attacks Marxism and the dialectical approach from several angles.[7] He considers that Economic Historicism takes too limited a view to be able to detect effectively all the possibilities at any moment of history, and that therefore it must end in fanaticism, irrationality, and destructive efforts to force men into preconceived social and personal patterns. He asserts that such an approach is fundamentally metaphysical and carries on a Platonic notion of essences—in this case, the notion of Essential Forces existent in the evolution of the material means of production. Such attitudes tend to a collectivist bias in which all reality of social and personal life is crushed out. They lead to a dualism between the abstracted elements and the rest of social and personal life—intellectual, aesthetic, moral; and by abstracting the Essential Forces as something which goes on its fated way according to inexorable scientific laws, they end by defining moral and spiritual virtue as acquiescence in the Fated Pattern of Events. What is, may be evil; but what is to be, will be good. Thus, by however roundabout a way, the final moral is bound to be Might is Right; and

[6] Popper (a) ii, 264f. The appeal to the Christian is a little strange, since one of Christianity's main contributions to culture has been the notion of a definite Pattern running through history (a notion taken over from the Stoa, the Chaldeans, and more fully developed). Whether one likes or not this notion, it is fundamental in Christianity.

[7] It is worth noting that in attacking Plato and Hegel as 'historicists', Popper takes a purely relativist and polemical attitude. He makes no inquiry into the stable enduring elements in their thought, and shows no sense whatever of historical reality.

the person who started out with a high moral aim and with intellectual integrity must find himself humanly deflated and forced into a regression towards a collectivism in which the vital balance of individual and society is lost—what Popper calls the Closed Society.

Now, it follows clearly from what I have already said that I should agree with what Popper says if it were possible to reduce Marxism to Economic Determinism. But the whole point of this book of mine is a refusal to accept that reduction, an attempt to show that it is totally incorrect to separate out certain of Marx's formulations away from the total movement of his thought. Throughout his life Marx was struggling with the Hegelian dialectic, fighting to sort out which of its terms and methods could be validly used and which confused the issues. Inevitably the struggle was not uniformly successful; certain aspects of the Hegelian terminology and method proved too tough. I have already gone into this issue to some extent and sought to show how Marx's break-through into a true logic of process was necessarily on one side conditioned by the total advance of science in his period; and the limits imposed on his break-through by the contemporary insufficiencies in the total scientific grasp of process appears in the extent to which Hegelian metaphysics govern the terms of his expression.

But that does not mean we can abstract those passages in which the Hegelian metaphysics control the formulation, and declare that the result is Marxism. The point on which I have insisted throughout this book is that Marx's central realisations reach far ahead of the limitations imposed historically on certain aspects of his work; and it is by taking those realisations as our criterion that we can complete the break-through into a fuller logic of process (which includes the problems of both structure and transformation).

If we bring forward then what I have called the full position of Marx, which includes on the one hand the basic realisations of the mid-Forties and such definitions as those of Labour Process in *Capital*, and on the other the great revelation of capitalist structure and conflict in *Capital*, we find that Popper's objections do not apply. Certain aspects of them may apply to various limited or distorted applications of Marxism, but not to the central stream. Further, Popper does not sufficiently recognise the new orientations, the new comprehensions, and

attitudes, introduced by Lenin, Stalin, Dimitrov. In a sense, I might define the purpose of this book of mine as an effort to bring the general philosophical aspects of Marxism up-to-date and in line with the theory-and-practice developed in social and political spheres by the three thinkers I have mentioned.

If then Marxism is developed along the lines implicated by the total movement of Marx's thought, where do Popper's arguments lie? First, his argument that no concrete history can be written. It is obviously true that a full history which would recapitulate everything making up the human process could never be written. But must it follow that the method of abstraction and selection considered valid in other branches of science does not apply to social science? Long before more than a comparatively few of the physical phenomena of the universe were known, generalisations about physics were being made; and however inadequate they were, they were absolutely necessary to any further advance.

Popper might perhaps argue that an imperfect generalisation about physical processes does not permanently warp the structure of matter, but an imperfect generalisation about history (since it provides the basis on which men try to plan their society and their personal lives) may warp the human structure. The answer to that is that ever since men reached any coherent group-organisation they have been projecting generalisations and concepts of purpose which have kept on affecting their group and their personal lives. And this applies not only in the sphere of limited adaptations and aims, but in the sphere of their total attitude to society, to man and nature. The theocratic concepts which governed in the first urban communities laid down very fully the notion of the purpose for which the city existed—the service of the god, the carrying-out of ritual which by ensuring the death-and-resurrection of the god ensured the continued life of the group.

Every step forward which humanity has made has involved the creation of new concepts of social purpose (whether in religious or secular terms); and from these concepts have grown up certain formulations of historical development, often mystical, without which the human advance is unthinkable. Those formulations have lain at the heart of social organisation, as well as at the heart of art and science. They have provided the structures through which the sense of reality has stabilised itself and grown ever deeper. To prohibit this activity and to limit such formulations to 'social engineering', the planning of

limited aspects of social life, is simply to deny the central dynamic of human development.

We cannot cut social science off from natural science and treat it as a dangerous sphere in which only partial movements of thought are permissible. Popper says that we cannot lay down a Law of Evolution because we cannot know all the evolutionary forms of the universe past, present and future, but admits we can work at laws for the specific areas of evolutionary process which come within the scope of our vision. What more can anyone ask? Science does not seek for some dogmatic absolute laws of development or movement in any sphere, even that of mechanics. It seeks to formulate, out of a method of trial and error, of theory and practice, the simplest and most effective definitions which can contain the given material. These definitions can serve only as guides to action (taking action in its fullest sense, which includes intellectual and spiritual action), not as dogmatic structures infallibly adequate to all contingencies and developments.

It seems to me then that the case against a scientific history falls down. History is possible, as long as we know what we are asking of it. That is the crux.

VI

History is possible. I should have said that it is necessary. The struggle to define concepts of human development lies at the core of human effort as far back as we can see. But to say that a scientific attitude is possible is not to say that a fully scientific understanding has been achieved, or can indeed ever be achieved. It merely means that we have got to go on trying, and—this is essential, or the effort ceases to be scientific—we have got to keep on realising the limitations of our 'laws'.

Science began as a self-conscious activity, separating itself out from a religious concept of the relation of group and individual, among the Ionian Greeks. It began in the act of projecting on to nature the sense of unity and law developed actively by the Greek tribal group emerging substantially intact into city-life. Only after the first simple abstractions of kin-unity in terms of natural process or structure did there appear the idea of conflicting elements, of opposites struggling inside the unity, in the thought of Heraclitus. The further growth of scientific thought and method among the Greeks came from the effort to affirm unity of process despite the evidence for conflict and contradiction.

These conditions have governed all scientific activity since the Greeks. The struggle has been to rediscover unity amid the complex confusions and conflicts of phenomena. Gestalt psychology shows us how the simplest perceptive act is the same process on a lesser scale; all knowledge is a movement from a whole to its parts.

Yet Popper would have us cut off social thinking and the science of history from this basic stream of scientific activity. It cannot be done without destroying the creative impulse in men. What, however, he has the right to demand is that we be acutely aware of the degree to which we have validly conquered a control of the material of history, and of the limitations of our generalised structures. He has the right to ask if what he calls Economic Historicism has advanced its understanding of the laws of social development to the point at which it can prophesy with precision or declare with certainty what facilitates human development at any given phase.

Consider Marx's prophesies about the capitalist system. By taking his economic isolate and analysing exhaustively the capitalism of his period he was able to demonstrate the existence of certain basic flaws or contradictions in the system, which no devices from within the system could overcome. He was therefore able to prophesy (*a*) the fact that the system must sooner or later meet shipwreck (*b*) that those basic flaws or contradictions would be the cause of the shipwreck when it came, (*c*) that the working-classes, on whom the socialising pressures of the capitalist development must primarily operate were the section of the community who must take the main action in changing the system to one better related to human needs.

With the wars of 1914 and 1939 in mind, with the endemic crisis which settled down after the post-war boom in the 'twenties, with the huge unemployment figures of the 'thirties and the rise of Fascism, and the threat of world-end through the control of nuclear fission by U.S.A. capitalism, there is no need to argue out here whether Marx was right or wrong. It is incontestable that he was right, as no one else was right, in pointing to inner flaws in the system which could only lead to disaster unless new and adequate forms of socialisation were found—unless a revolutionary (i.e. basic) change in social political and economic organisation occurred.

To deny the correctness of Marx's major prophesies is thus impossible; and to point out that the development of general crisis has been vastly more complicated than he could visualise

in the fifties and 'sixties of the last century is in no way to obscure the correctness. Fundamentally his analysis of capitalism has been vindicated all along the line. To claim more than this, however, is of course foolish. Having seen that in major points Marx was correct, we may then go on to minor points of formulation and discuss their comparative weakness.

There can be no doubt that Marx expected the final crisis to come earlier than it has come, and to come in a much simpler way. His picture is always of a jamming of the whole system by the flat contradiction between the integrative or socialising trend of capitalistic method and the obstructive monopolistic trend of control or ownership. Fundamentally, I repeat, this description of the *impasse* in which capitalism must end has been fully justified; but the actual working-out has involved a highly complex pattern of tensions and adjustments, of modifications and irregularities, which Marx simply could not even guess at. Lenin formulated the main aspect of these new elements in the situation, by his thesis of the irregular developments in capitalism; and Stalin and others have carried this thesis much further yet. But nobody foresaw fully, to take one outstanding example, the extent and significance of the rise of Fascism, or the degree to which such a movement could mould a great 'industrialised' people like the Germans to its will.[8]

Again, the way in which the development of crisis extended itself meant the need to work out and integrate a whole new series of tactics, which Marx had scarcely even begun to formulate. Lenin made the decisive turn in this matter, with the concept of United Front—the uniting of a maximum opposition to reaction at every change in the political situation.

From 1900 onwards, the advent of complicating factors has rapidly increased, so that modifications and irregularities have delayed and entangled the progress of capitalism towards the

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[8]It is an astonishing example of insight that Jack London in his prophetic fantasy of Fascism, *The Iron Heel*, wrote, 'Out of the ethical incoherency and inconsistency of capitalism, the digarchs emerged with a new ethic, sharp and severe as steel, the most absurd and unscientific and at the same time the most potent ever possessed by any tyrant class. The digarchs believed their ethics, in spite of the fact that biology and evolution gave them the lie, and because of their faith, for three centuries they were able to hold back the mighty tide of human progress—a spectacle, profound, tremendous, puzzling to the metaphysical moralist, and one that *to the materialist is the cause of many doubts and reconsiderations*,' (Ch. xxi—my italics). Another literary man, William Morris, foretold the rise of a fascist party (*News from Nowhere*).

crash sketched out by Marx, and the problem of tactics has become correspondingly involved.

All these considerations (and others of the same sort might be cited) do not affect Marx's fundamental conclusions; but they raise a number of points about the method used by Marx, about its effective scope and its limitations.

VII

All these questions cluster round the problem of the validity of the economic isolate as used by Marx. Marx took that isolate because it yielded a measurable factor in the basic elements of social movement and because it therefore alone provided him with a direct political weapon of the first magnitude. He hoped to use it to prove that capitalist society was rent by a contradiction which must pile up and destroy it; and he was right in his hope.

But just consider what this method of approach implies. It means that Marx is not working like a scientist who begins investigating some area of nature which arouses his interests and who arrives at his conclusions after he has analysed and integrated the problems before him. Marx starts off with the conviction that capitalism is evil and should be destroyed; and he turns to political economy because he wants to use that medium to prove his already-determined point. This is not to throw any doubts on the scientific value of his findings, which are tested out rigorously by scientific method and conscience.[9] But it does raise the very relevant question: Why does he have the *already-formed conviction* of capitalism's vileness and self-destructive character?

To answer that question we must turn, as I have been insisting throughout this study, to the Marx of the 'forties. There we find that what obsesses him is the Whole Man. He revolts against capitalism because it crucifies the Whole Man, because it is abhorrent to his moral and human convictions, and because out of the potentialities of the existing world of men he can form the clear concept of a better world.

Marx's originating and basic attitude is thus moral and humanistic. Any analysis of his work which does not start from

[9] Joan Robinson, 26f, says of Marx, 'his terminology (in *Capital*) derives its force from the moral indignation with which it is saturated', and thinks his theory of Value is irrelevant to his main argument. But that theory is both the scientific core of his argument and the point of integration with the whole (moral) man.

this understanding and hold it fast all the while is incapable and distorting.

VIII

We have then this main proposition. Marx founds a philosophy which is fundamentally moral and humanistic and which lays all possible emphasis on the dialectically directive powers of the spirit; Marx spends much of his life, and is chiefly known in history, as the propounder of a theory in which movements in the economic sphere determine human development along lines independent of human will.

The contradiction is only one of terms, and can be resolved by further inquiry into Marx's full meaning. All through this book I am attempting that resolution; and here I should like to point out how unfortunate have been the limited readings of Marx which have taken the economic movements as fated, as proceeding according to a series of abstract categories of development which human will may slightly and temporarily disorder but cannot essentially affect.

Popper is able to point quite correctly to the disastrous effect of this concept on the Social Democratic parties of Europe in the pre-1939 period. Their actions were determined

by their implicit belief that socialism must come. But this belief was often combined, in the leaders, with a hopeless scepticism in regard to the question of their own immediate tasks, and of what lay immediately ahead. They had learned from Marxism to organise the workers, and to inspire them with a truly wonderful faith in their task, the liberation of mankind. But they were unable to prepare for the realisation of their promises. They had learned their textbooks well, they knew all about 'scientific socialism', and they knew that the preparation of recipes for the future was unscientific Utopianism . . .

They waited for the promised suicide of capitalism. After the inevitable capitalist collapse, when things had gone thoroughly wrong, when everything was in dissolution and the risk of discredit and disgrace to themselves considerably diminished, then they hoped to become the saviours of mankind . . . The suffering masses needed more than that. Slowly the leaders began to realise the terrible consequences of a policy of waiting and hoping for the great political miracle. But it was too late.[10]

And in fact the general lack of interest in actual social and economic issues and methods, in constructive social activity,

[10]Popper (a) ii, 133. These attitudes were precisely the 'Marxism' against which Lenin fought all his life, convinced as he was of the formative power of mind.

was such that Lenin exclaimed after the 1917 Revolution: 'I do not know of any socialist who has dealt with these problems. . . . We must go by experiments.' The Webbs's comment:

In the first few weeks after he and his friends had seized power, they could do no more than live from hand to mouth, without anything like a plan, issuing innumerable separate orders about particular enterprises that had been left derelict.

'Workers' delegations', he said afterwards, 'used to come to me with complaints against the factory-owners. I always said to them, "You want your factories nationalised: well and good. We have the decree ready. But tell me. Can you take the organisation into your own hands? Have you gone into these matters? Do you know how and when you produce? And do you know the relations between your production and the Russian and international market?" And inevitably it transpired that they knew nothing. There was nothing written about such matters in the Bolshevik textbooks, or even in those of the Mensheviks.'[11]

So spoke Lenin with his usual directness and honesty. Popper legitimately contrasts this statement by Lenin that the Bolsheviks had to start from the bottom upwards in all problems of actual economic organisation, with the over-simplified statements written only a few months before in *State and Revolution*, on the eve of the revolution:

Accounting and control—these are the principal things that are necessary for the 'setting-up' and correct functioning of the first phase of communist society. All citizens are transformed into the salaried employees of the state, which consists of the armed workers. All citizens become employees and workers of a single national state 'syndicate'. All that is required is that they should work equally—do their proper share of work—and get paid equally. The accounting and control necessary for this have been so utterly simplified by capitalism that they have become the extraordinarily simple operations of checking, recording and issuing receipts, which anyone who can read and write and who knows the first four rules of arithmetic can perform.

When most of the functions of the state are reduced to this accounting and control by the workers themselves, it ceases to be a 'political state'.[12]

But Popper, in labouring this point, omits to show how Lenin, after facing the problem of actually organising a socialist state, developed a new attitude to social and economic techniques.[13]

[11]Webbs, 605f.
[12]Lenin (a) vii, 92f; Popper (a) ii, 305.
[13]The Leninist polemics against 'Social-Democracy' (after the split-off of a section of S.D.s as Communists) all reduce to this point. The S.D.s base themselves on Economic Determinism (which, being passive, works out as

And though all Marxists may not have realised the change, the change was there. Thus Lenin again was discovering the limitations of the historical isolate with which Marx had worked, and was filling out the gaps.

Much of course yet remains to be done, and will continue to remain to be done, since Marxism never set out to be more than (in Engels's phrase) a guide to action.

IX

But now I must return to the basic problem that Marx, whose attitude to capitalism had been set by humanistic and moral principles, has been taken to formulate; a theory of history in which inexorable economic laws, not decisions proceeding from the whole man, were to overthrow capitalism. To resolve this problem we must go much more deeply into the question of what constitutes historical action. A key-point is the claim apparently made by Marx and Engels that history develops through a pressure of forces independent of the wills of the individual actors, and that these necessary and essential forces can be abstracted as the economic factors. What exactly is meant by this formulation? On our answer to that question depends our whole interpretation of Marxism.

It follows from the concept of man put forward by Marx that the one generalisation we can safely make is that man is an animal who has achieved an active relation to nature. At any stage of development, before class-society, in or beyond it, that must be so. Man, in this process of becoming human and more human, achieves universality and freedom. Man is universal in so far as he realises his active relation with nature, since in that relation he develops far more than a rationalist instrument of knowledge; he achieves more deeply the creative power of projecting gestalts in which a unity of nature and humanity is brought about. He is free in so far as this process of union with nature widens the area of his potentiality, extends the area of choice by the enrichment of personal living, and builds a society in which this continual enrichment of personality can harmoniously express itself.[14]

waiting on, relying on, the capitalists); the Leninists take 'spirit' as a real formative activity. Lenin's new attitude to 'social techniques' was thus only an extension into a new field of action of his fundamental activist line, which is based on the concept of mind as a formative force.

[14] Marx and Engels stress consciousness and aim when considering Man in Nature, e.g. Engels in *Feuerbach*: In nature 'there are only blind unconscious agencies . . .' but 'in the history of society . . . the actors are all endowed with consciousness, working with deliberation or passion, working towards definite goals . . .'

These are definitions, Marx makes clear, which apply to man at any and every stage of his development.

It follows that there is a very complex relation between the full movement of the self and the conscious exertions to which is attached the feeling of will. And again there is a very complex relation between the conscious and unconscious ingredients making up the individual and the full nexus of social relationships through and in which the self develops.

In any given historical situation we meet a group of men who all have their conscious aims of will, but who also have their total personalities (which the will only partially controls or expresses); and the movement of the group is made up out of the sum of these conscious and unconscious aims inside the full environmental field. There is conflict and unity in the group, and conflict and unity in the self. Marx has pointed out that the total group-movement is not consciously directed by any one will or by any mere addition of the wills; and Freud has shown that the total movement of the self is not along lines laid down solely by consciousness or will.

But the relation of conscious and unconscious is not a static one; at any given moment of individual or social life the elements vary in quantities and in mode of mixture. What, however, we can assert is that there is a real relation between the factors of conscious and unconscious in the individual and the factors of conscious and unconscious in the group. Not in any mechanical equivalence, but because both individual and group are involved in a common field with nature.

Both the positive and negative, the dynamic and inhibitive elements in the common field are directly related to the degree of control of nature which the culture exhibits; and within the common field there will be differences brought about by the type of work and the social relationships of any given individual. Generally speaking, advance in the control of nature involves an increase in the universalising faculty and in freedom, in the range of choice opened up to personality. (This freedom is of course no anarchic matter of irresponsible choices; it is related at every point to the positive and active field in which men are tackling nature—achieving universality).

The important point to grasp is that freedom is not a simple matter of the conscious will, however necessarily it implicates that will. It is a movement of the whole self into increased potentiality, into a wider range of comprehensions and capabilities. Therefore, to say that the action of any group—a

family, a guild, a club, a class, a nation—is independent of the conscious wills, is to make a statement which must be true of human activity at any possible stage of development, whether in the primitive clan, in a Sumerian city, in Greece or Rome or medieval society, in capitalism or communism.[15] And to say it, does not imply that men at any of those stages are blind pawns in the grip of an economic movement in which they see only a minor section of personal interest.

The economic movement on the contrary is one aspect of the total movement which is freedom and universality—human life.

X

Once this point is grasped—and I trust I have shown it necessarily follows from Marx's concept of man—the objections raised by Popper fall to the ground, and there is no danger of an incorrect use being made of 'social science'. For the thinker will be too aware of the difficulties in the way of grasping the total movement to assert a larger claim than the facts warrant. In the matter of Marx, it will be seen that his fundamental analysis of capitalism and its trends—an analysis proceeding out of a humanist and moral judgment—has been justified; but in order to work out *fully* the methods of its application we must return with it into the humanist and moral level. That is, to grasp effectively the way in which the new harmony or balance can be achieved in society, the thinker must reach out to hold and understand every positive and truly-uniting trend in his world, and must seek continually to bring them together to the best of his ability. Then, and then only, there can be no risk of trying to force life prematurely and abstractly into the categories of the generalised analysis of structure.

And this method, I wish to emphasise, is the method increasingly followed by Lenin, Stalin, Dimitrov.[16] The aim of this book is to bring out the full implications of the unity of theory-and-practice in their work.

In passing, I should like to glance at the phrase of Hegel's: 'Freedom is the recognition (or appreciation) of necessity.' Hegel used this categorical opposition of freedom and necessity as part of his servile trickery. It is a final form of the old Stoic

[15] This is not to say that the *proportions* of conscious and unconscious, the *degree* of universality and freedom, do not vary. See next section.

[16] In the decisive changes developed by Lenin, Trotsky represents the splitting-off of the abstract 'historicist' in Popper's sense.

concept that the wise man can be free in prison. Hegel means that by understanding the necessity of the State and its apparatus of force one accepts it and rises above the necessity into the transcendental leap of freedom. By this dialectical device he escapes the problem of actively realising freedom.

Engels used it in a different sense. He meant that by scientific understanding we control nature and also are given the chance to break through the bonds of class-society into a higher unity. He wants to emphasise the need for concrete comprehension as the first step to ensure that one's acts are not self-frustratory —that they are relevant to the total situation.

However, the term has probably outlived its usefulness. Its reliance on the Hegelian oppositions makes it liable to distort rather than encourage concrete realisation. It tends to suggest that necessity is some external structure to which men must accommodate themselves; it encourages a passive rather than an active attitude, and a retreat towards economic determinism.[17]

We must always bear in mind the anti-Hegel twist often involved in the use of Hegelian terms by Marx and Engels. They were forced to use Hegelian terms as the best available, but they were only too well aware of many of the distorting factors which the terms had gathered round them. So, sometimes they used the Hegelian term with a new surprising slant; sometimes they wrote with Hegel polemically in mind, but without mentioning him. For instance, in Marx's insistence on the blind factors in history, we hear a polemical note aimed against Hegel's servile effort to attach a directing consciousness to the State:

> The State is the march of God through the world . . . The State must be comprehended as an organism . . . To the complete State belongs, essentially, consciousness and thought. The State knows what it wills . . .
>
> The State is the Spirit of the People itself. The actual State is animated by this spirit, in all its particular affairs, its Wars and its Institutions . . . The self-consciousness of one particular nation is the vehicle for the . . . development of the collective spirit . . . In it the Spirit of the Time invests

[17] Popper (a) ii, 96, points out the pragmatic dualism involved by Marx's taking-over and re-using of the Hegelian concepts of the kingdom of necessity against the kingdom of freedom. His analysis suggests that we must treat these phrases (in Marx) as simple oppositions of capitalism (the masses fettered to 'material' necessity) to socialism ('spiritual' freedom for the masses)—and not as philosophic concepts involving a dualism of necessity and freedom, matter and spirit, with a consequent blank gulf between capitalism and socialism. This is good as far as it goes, but it ignores (as all Popper's analysis does) the deeper questions Marx is raising.

its Will. Against this will, the other national minds have no rights: that Nation dominates the World . . .

The State is therefore the basis and centre of all the concrete elements in the life of a people: of Art, Law, Morals, Religion, and Science . . . The actual State is animated by this Spirit in all its particular affairs, as in Wars, Institutions.[18]

No wonder that with this personification of the State in mind, Marx wants to emphasise the deep forces at work in history under the surface of the power which Hegel so glibly furnishes with will and consciousness.[19]

But, mixed up with the polemical use of terms, is a deeper issue, derived from the problem of 'ideology' in general, the 'false-face' in consciousness which Engels, ahead of Freud, so brilliantly recognised. Marx is saying that in previous societies, on account of (*a*) the insecure and unstable control of nature and (*b*) the internal divisions based on power and property, this false-face has had a special character and function, which begins to fall away as soon as human unity is actualised amid conditions of stable plenty. In this sense there is a release from the ideological false-face. There is at last the chance for the emergence of what Whyte calls unitary man. 'Unitary man, escaping both the earlier dissociation and the more recent disintegration, develops as a co-ordinated person, capable of seeing himself whole, and therefore of recognising the single truth which is expressed in freedom and necessity. But to avoid ambiguity this recognition must be formulated afresh in unitary terms.'[20]

And part of this reformulation is a correct understanding of the relation of conscious and unconscious elements in man. To Freud, entangled in the capitalist system at its highest peak of integration and disintegration, the relation is one of violent conflict, solved only by sharp repression. For unitary man, the man of world-socialism, the relation will be one of organic polarities in which transformation occurs without repression. That is, the individual will *simultaneously increase his unconscious depth and his conscious range*, with a new freedom and fullness. Once we understand this point, we are relieved of the fear that a Marxist world-society can be one based on abstract

[18] Hegel (e) 389, 447, 443, 446, 388, 403, 267, etc. Cf. Gentile (c) 235f on the State 'conscious of its ends, and vastly superior to individuals'.

[19] Marx's formulation is both anti-collectivist (against Hegel's facile identification of individual and society) and anti-rationalist (against the liberal-capitalist idea that enlightened self-interest is aware of the origin and effects of its actions). But it also raises the basic questions I deal with in Ch. 7 and 11. The *Unity* of communist society must bring into a basically new clarity the relation of conscious and unconscious, freedom and necessity.

[20] Whyte (a) 234. This is Engels's man who inhabits freedom.

rationality—on a death of ideology entailing a consciousness without an unconscious! A monstrous conception of man as a robot of rationally perfected will!

XI

Croce is a Hegelian who has tried to bring idealism up to date, and who has put forward a theory of Historicism as the science of history, 'the affirmation that life and reality are history and history alone'. Here history is considered as the manifestation of the free spirit, so that in the realising mind it appears as a simultaneity. Progress is self-realisation.

> In contrast with this idea of a progress towards the terminus of some blessed state of self-satisfaction there has very properly been conceived the idea of the infinite progress of the infinite spirit, which perpetually generates new contrasts, and perpetually rises superior to them.[21]

This concept does not, he argues, condemn men to futility and repetition or a 'wild race towards the unattainable'. Everything is transitory, yet everything is preserved in progress. Amid all doubts and demands for new achievements,

> something is possessed and enjoyed, and the apparently precipitous race is in reality a succession of réposes, of satisfactions in the midst of dissatisfactions, of fleeting moments spent in the joy of contemplation. The most evident proof of this is to be found in art and poetry which are never self-satisfied, but always create new forms whose created works stand there like deities upon a serene Olympus, abounding in strength and beauty. All through life the historian is moved by an impulse towards the future, he looks on the past with the eye of the artist and he sees the works of man in this light, both perfect and imperfect, both transient and intransient.[22]

The unity of process is affirmed, but without any clear statement as to how different strands or aspects come together or separate out. Thus, he declares,

> this ethico-political history does not stand over and above other histories nor does it resolve them in itself, but it penetrates into them, and obtains from them its own concrete quality: as they too do from each other . . .

[21]Croce (d) 65. This attitude leads logically to Gentile and his support of the Fascist State as Pure Spirit: 'Reality is spirit; and spirit never is but is always coming to be, not something given but a Free Activity. That is what distinguishes it from nature, and, such being its essence, spirit, which is identical with reality, is history, or the process of self-realisation' (a). Spirit is 'the *one man* in whom all individuals are united and with whom they are all identified.' Individual will is 'really' one with the Static will (b).

[22]Croce (d) 54.

The solidarity of life brings a consequent solidarity in historiography, each special history from time to time distinguishes itself from the others only to be again merged in them.[23]

There we are in one breath told that one history does and does not resolve itself into the others, but what the relation is, we do not gather. The idealist sense of unity is paired off with scholastic attempts at definition and differentiation. Consider the mixture of a real sense of unity with an abstract idea of identity and interrelation in the following passage; and consider too the pragmatic and vulgar opposition of politics and ethics, which occurs at the very point of the effort to vindicate the 'transformation' of one into the other in a living unified stream:

In this continuous transformation of morals into politics, which still remains politics, lies the real ethical progress of mankind, just as in the transformation of thought into poetry lies the perfecting of an ever more rich and profound poetry. Thus on the one hand (in pure poetry) Homer, Dante, Shakespeare and Goethe are poets who cannot be compared with one another, and are independent of one another, on the other hand (in civil history) the one is placed in juxtaposition to the others in an ever-increasing spiritual complexity.

Just as the poet, unconscious of philosophical concepts, finds his attitude of mind pervaded with new ideas, so the politician concentrating on utilitarian motives is confronted with new interests which arise from new moral needs, which he cannot evade and with which he must reckon; he must accept the new material with the old, just as he accepted the old, and must translate both alike into political action.[24]

Croce throws overboard everything in Hegel which genuinely grappled with historical change, and accuses Marxism of being teleological and mystical.[25] In it, he says, the structure is like a hidden deity; and he argues that we cannot explain ethics or art unless we go back behind classes or other groupings of conflict into a unifying social element.

Not that we wish to ignore divisions and contrapositions of this kind although they are indeed very much less simplified and rigid and constant than this tendencious doctrine usually maintains. But not only morals, even politics become altogether unintelligible unless we go back to the concept of 'classless class', of a 'general class' which lays the foundation and rules and governs the state.[26]

[23] Croce (d) 58.
[24] Croce (a) 133f.
[25] We might say that in order to emphasise continuity and the stable enduring elements in history, Croce abstracts these aspects, and thus, by cutting them off from real change, makes them irresponsible, purely intuitive.
[26] Croce (d) 202

Now, that Croce is raising a real problem in this matter, w have already agreed. Marx emphasised that there is unity in al functioning societies as well as conflict. But to point to thi functional unity is a very different matter from abstracting i as a 'classless class'. The unity is indeed the stabilising factor which holds society together despite all the strains and stresse of conflicts and new formations; but to identify it with a 'class which governs the State, apparently somewhere well abov the conflict, is to falsify the whole picture.

The way in which Croce abstracts the moral unifying prin ciple of society is thus discussed by Antonio Gramsci, a Italian Marxist, who died in 1937 after eleven years in a Fascis jail:

> In contradiction to himself, Croce confuses 'liberty' as a philosophi principle or speculative concept, and liberty as an ideology or practica instrument of government, an element of moral hegemonic unity. If al history is the history of liberty, or of the spirit that creates itself (and i this idiom, liberty equals spirit, spirit equals history, and history equal liberty), why should European history of the 19th century alone be th history of liberty?
>
> It will be then, not the history of liberty in the philosophic sense, bu the self-consciousness of that liberty and of the diffusion of this self consciousness under the form of a religion in the intellectual strata an under the form of a superstition among the people, who feel that they ar united with those intellectuals, that they are participating in a political blo of which the intellectuals are the standard-bearers and priests.
>
> We are therefore dealing with an ideology, that is, with a practica instrument of government, and it will be necessary to make a study of th practical nexus on which it is based. 'Liberty' as an historic concept is th very dialectic of history and has no practising 'representatives', distinc and individuated. History was liberty even under the oriental satrapies since even there, there was historic 'movement' and those satrapies crum bled.[37]

XII

There is no need to analyse Croce at any greater length. He has been cited as the final exponent of a deliquescent Hegelianism; and it is of interest that he, the archpriest of Historicism, should make the same criticism of Marxism as Popper, the archfoe of Historicism. Both look on the attempt to grasp a

[37] Gramsci, 289. He thus argues that Croce is working himself into a position from which to justify the Fascist regime as 'history' and therefore 'liberty'.

structure of development in history as the crime of Marxism. Thus extremes meet. Both deny that the attempt to grasp such a structure can be made without sacrificing the Moral Man: and Croce goes so far in his desire to snatch the moral aspects from Marxism that he hands them over to the 'classless class' which governs the State. Hardly a sincere attempt to vindicate the wholeness of man.

On the other hand, I have striven to show how Marx's thought, taken in its fullness, does show us how to integrate the moral, cultural, political, economic aspects of society and of the individual. I have not denied that there is here a crucial point, which Marxism needs to develop and reformulate in a more thorough way. But the key to the fuller understanding can be found in Marx, and not in his critics—though an intelligent critic such as Popper is of value in illuminating the points at issue and clarifying the lines along which a further development is required.[28]

If my analysis has been correct, then we can still use the economic isolate effectively in trying to make sense of history. Since it provides the only measurable aspect of social process, it gives us an important clue to the structure of human development. But we must beware of making it a *deus in machina*. It does not explain human development by some law of self-movement. In dealing with any particular period we must indeed seek to understand with all possible precision and clarity the measurable movements in the economic sphere; but in order to grasp the full nexus of cause and effect we must go on and attempt to relate the economic findings with the full stream of internal transformations grasped in their unity with environment (nature).

We can then see the real part played by spirit or mind in facilitating the productive process; how that process cannot be

[28] I have not needed to deal with the exponents of the Sociology of Knowledge (Scheler and Mannheim) who think that by a process of socio-analysis the intellectual can understand and detach himself from the socially-conditioning forces which have made him what he is. The intellectual thus achieves a total objectivity, above ideology. Popper finely shows how such an attitude really omits the social factor. Scientific objectivity 'is a matter of scientific method. And, ironically enough, objectivity is closely bound up with the social aspect of scientific method, with the fact that science and scientific objectivity do not (and cannot) result from the attempts of an individual scientist to be "objective" but from the co-operation of many scientists. Scientific objectivity can be described as the inter-subjectivity of scientific method.' Popper (a) ii, Ch. 23.

Nor need I discuss A. Toynbee's huge *Study*. Valuable as it is for its collection of materials, the system is thinly scholastic, and, like Croce's, has the Hegelian vices with a few Hegelian virtues. Where Croce supplants the effort to grasp a structure of development with his Simultaneous Spirit popping in and out of History; Toynbee supplants it with devices of Alternating Balances, etc.

separated from techniques, arts and sciences, institutions and ethics. The tempo of development, the complex direction and all its tangle of differentiations, can only be understood in terms of this full dialectical analysis. We thus finally remove the abstract teleological principle, which appears when any effort is made to fit development into given categories; and are enabled to think simultaneously of man in a unity over against nature and society developing through all sorts of internal differentiations and conflicts. There is no 'inevitable next stage', there is no Fate, in history; but there is a Purpose, totally inherent in the movement at any given moment. And we can analyse this Purpose, this total movement, not as a given static schema of relations and modes, but as a structure in process of development and therefore involving certain dominant potentialities. Along those lines we can validly explore the future. In fact, men have always done so. Our problem to-day is to make the exploration with a surer and fuller understanding of both the actual and the potential; and Marx has given us the first clear lead in this direction.[29]

But what critics like Popper cannot understand is that Marx knew very well that his discovery and working out of dialectical unity was bound up with the emergence of a social force capable of actualising unity in a new way. Therein lies the key to Marx's prophetic powers, his right to announce the coming of the revolution. He was not analysing just one more social change. His methodology was bound up with a total historical movement in which at last certain contradictions or divisions or a-symmetries (that had been developing throughout in force and extension at the heart of the powers of unity and mastery-

[29]The problem of human history is thus only one particular aspect of the general problem of Purpose in process. We have already considered it in Biology, and it is relevant to recur to the findings there. Keith puts one aspect correctly thus: 'There is in the human thigh-bone, as Dr. Paley was well aware, just as clear evidence of engineering and architectural skill as are to be found in any watch.' The bone-builders are specks of protoplasm called osteoblasts. 'We have reason to regard osteoblasts as having a species of consciousness—at least we know that they are sensitive to the strains and stresses which fall on them and respond by laying down material so as to meet and carry all transmitted forces.' But 'we have never occasion to make any discrimination between "planner" and "doer", as Dr. Paley' did in abstracting Design. 'There is no duality of function in living matter . . . The power to design is a property which is inherent in every form of living matter known to us,' (Keith, 42f). Therefore we must think simultaneously of Design, Structure, Process. (Cf. M.B. Foster, on the concept of Development without Teleology, 201-4. But such arguments tend towards Crocceanism.) In human process *the active aspects* mean a new kind of emphasis on Purpose: men *must* strive to grasp the structure of their purpose, and that includes the future. But as I have stressed, for that very reason, dogmatism must be avoided at all costs.

of-nature) must be realised and overcome unless humanity wa to collapse and hopelessly regress. Within this focus the nev twist given to the Hegelian opposition of freedom and necessit had its profound meaning—though it is an opposition easil misunderstood by all who have not advanced to the centre o Marx's position. Within this focus Marx has the right to la down the law on the next general stage of human process. Fo there is nothing dogmatic in his act; he is simply realising him self as a human being.

A. NOTE ON ETHICS

I

From Marx's definition of man it follows that morals have a stable and continuing element as well as a relative element All that contributes to advance co-operative activity is good and always has been and will be good. All that enables men to come together and unite against nature, in harmony with nature, is good. All that within this framework increases the freedom of personality and energises the individual is good All that increases the scope of individual activity and choice within this framework is good. All that extends sympathy and understanding is good.

On the other hand, all that obstructs the free development of personality and society is bad, and always has been, and always will be. All that prevents men getting together in the common jobs of understanding and mastering nature is bad. All that imposes inequalities other than those of natural ability and character is bad.

What do we mean in putting forward such propositions as eternal moral principles? Obviously we do not mean that men began with a set of such principles and that they have kept on setting them forth throughout history. Certainly in most societies we could find statements approximating to them, and the wide prevalence of the Golden Rule (Do to another as you would wish him to do to you) is an example of this.

But that is not the point. One means that such principles have been at work among men to some extent from the earlier days, and at all stages, since without them the groups would have fallen apart. True, one can find groups who seem to push such principles into the background;[30] and at all stages one

[30] E.g. Mead's Mundugumor's or Benedict's D

can find various modifying and distorting factors at work. But it is obvious that any group which systematically employed lies and hatred and non co-operation would perish. However many lying and hating and individualistic elements persisted, other co-ordinating and harmonising elements must to some extent have counteracted. And by the time we come up past the stages of pre-agricultural groupings to settled urban communities we do find a fairly stable morality in which elements of love, truth, and union have a strong position.

I am not here setting out to tell the history of morals; and therefore this extremely simple formulation must stand. It is enough, I think, to put forth the thesis for stable and continuing elements of human morality, which may be refined and developed into subtler balances, but which can in one sense never be outgrown.

A Marxist morality must affirm above all things these stable and continuing elements, since they are closely related to the co-operative aspects of production and are in this sense the primarily human qualities in action. So far from being relativist in morals, a Marxist outlook alone has the basis for a thoroughgoing affirmation of all that is least relative in the moral personality.

II

These statements must not of course be taken to deny the existence of relative elements in the history of morals. The merest glance at the enormous diversity of customary moral attitudes on all the central matters of human life (birth, death, marriage and so on) is enough to demolish any absolutist thesis. And if we are concentrating on these relative aspects, we can then of course speak of historically-labelled moral systems—feudal morals, bourgeois morals, communist morals. Because Marx and Engels reacted so violently against those aspects of bourgeois morality which tended to reduce social relationships to monetary relationships, to relationships between things, they often spoke of communist morality as something cut off from bourgeois morals. But they did not in the least mean some relativist system of morals which would enable communists to lie and cheat the enemy, to devise collectivist schemes without any concern for the individual, to force personal morals into the key of some passing need of the State, and so on. They merely meant a moral system which abolished all remnants of the treatment of people *as things.*

In the sense in which I have used the terms above, they meant the strengthened return to the human tradition, the entire freedom of truth and love. A vindication of the stable and enduring elements, not a repudiation of them.

III

The Hegelian dualism had a strong Machiavellian touch. Because the State was equated with the unifying Spirit, the reconciler of opposites, there was no law to bind the State.

> The deeds of Great Men, of the World-historical Personalities . . . must not be brought into collision with irrelevant moral claims. The Litany of private virtues, of modesty, humility, philanthropy, and forbearance, must not be raised against them. The History of the World can, in principle, entirely ignore the circle within which morality . . . lies.[31]

Marx's revolt against this sort of stuff lay at the heart of the tremendous moral fervour out of which came his denunciation of capitalism as dividing up the living man.

Yet we find Engels, for instance, in his eagerness to turn such attitudes as that of Hegel cited above against the smug defenders of a cloven system of morals, writing as follows:

> According to Hegel, evil is the form in which the motive force of historical development presents itself. This, indeed, contains the twofold significance that while, on the one hand, each new advance necessarily appears as a sacrilege against things hallowed, as a rebellion against conditions which, however old and moribund, have still been sanctified by custom, on the other hand, it is precisely the wicked passions of man—greed and lust for power—which, since the emergence of class antagonisms, serve as the lever of historical development—a fact of which the history of feudalism and of the bourgeoisie, for example, constitute a single continual proof.[32]

Engels is there taking up what Hegel means to be a defence of the State as absolute spirit and turning it into a polemic against the State—and also against the half-baked idealism of Feuerbach. But he forgets thereby to ask where he draws the definition of good and evil from. How is it that Hegel, the defender of state-absolutism, and Engels, the defender of communism, both agree that 'evil' has been at the forefront in class-history? Whence comes the criterion?

[31] Hegel (c) 426; (d) §345.

[32] Engels (a) 47. Cf. the passage from Marx's *Money* (cited above Ch. 1 § vii) where Marx appeals to a *natural and human* morality accessible alike to himself and to Shakespeare.

The only answer can be to turn back to Marx's definition of man, with its corollary of a stable and enduring human ethic. It is in terms of this ethic that both Marx, Engels, and Hegel agree on calling certain forms of violence and greed, cruelty and egotism, wicked.

The stable ethic resides in all that in a given society which makes for co-operation, union, freedom, and effective control of nature. (Again, let me insist that the actual working-out of this generalisation at any point of time and space is highly complex.) If it had not been for the powerful elements making for union the 'evil' forces to which Engels refers would have torn society to pieces within twenty-four hours. In short, the conflict always goes on within a unity.[33]

IV

If one were extending this argument further, one would go on to show the stable enduring elements in the human organism which underlie all the stable enduring elements in ethics and in scientific or artistic expression. Along these lines one would be enabled to grasp and explore the common element which has existed since the beginning of humanity and will continue till the end. At this point then I refer the reader back to the chapters on psychology: to the discussion of the relation of gestalts, intellectual, moral or artistic, to the whole organic structure of the individual in its tension and unity with environment, and to the discussion of the way in which this gestalt-creation is linked with the rhythmic bases of organic life as well as to the 'archetypal forms' which I suggested were built up in the period before the infant learns to speak.

[33] In the unitary approach to ethics (with purpose and process one—see note at end of Ch. 8) the problem of Means v. Ends simply ceases to exist. This point has already been seen by thinkers like Dewey. 'The end is the present activity, and so there is no gap in the mind between means and ends,' (b) 21-32.

CHAPTER NINE

The Structure of Hegelian Dialectics

BEFORE WE CAN effectively discuss the adequacy or otherwise of a dialectical logic founded on the Hegelian categories, we must consider the way in which those categories were devised. The historical conditions out of which they came, and the basic attitudes in their deviser, are of primary importance.

Hegel's Logic is essentially a theory of knowledge. All its virtues and vices flow from that fact. Hegel asks by what process he has gained knowledge and consciousness. He begins therefore with himself, his isolated self, and opposes it to the outer world. There are two things, two factors. What unites them? What brings them together? He answers that it is the act of knowledge. By that act the rest of the world is included in his mind.[1]

It is that act, he goes on, which alone links himself and the world. Therefore the act is that which unites. If he knew all things, all things would be related in him. Therefore the all-knowing Spirit must exist, since only thereby can the unity of relations be established. The Spirit is one with Being, since all things are included in its act of knowing, As in self-consciousness the self is both object and subject of knowledge, so the absolute Whole constitutes the objects of knowledge by externalising itself and knows the objects which it has externalised. Thus, the human process of cognition, whereby relations are established in the knowing mind, is identified with the processes which it knows and relates; and all relationship exists by an act of spirit.

This argument, which I have roughly summarised, is fundamental to any understanding of the way that Hegel's Logic originated. In it Hegel begins with a Dualism. Men are conscious of self, he says, only in so far as they distinguish it from not-self. Self appears, exists, is known, only in opposition to not-self. Self and not-self are mutually dependent, and the act of knowledge includes them both. Unity or the Synthesis arrives as the result of the two opposed objects colliding. Spirit is the unity which transcends the opposition.

[1] Hegel (a and b), W. Wallace, W. T. Stace, A. C. Ewing, Caird (Ch. 8).

another that change in the universe was merely a matter of different combinations of given and unalterable elements or units. Alchemic intuitions of transformation might beat against this idea, but could not centrally affect it. But with the foundation of chemistry as a science it was discovered that something really new came into existence in chemical combinations—that water could in no wise be described as two gases. And so the concept gradually grew of a single stream of matter which at certain nodal points, mathematically describable, went through transformations into elements.

Chemical change is thus the clue to Hegel's advanced concept of process. It appears in his basic formula—that out of quantity, at a certain stage, comes quality. Out of two gases meeting, comes water which has a quality different from the gases and which can yet be related to them by a quantitative formula (H_2O).[2]

This basic formula, however, Hegel insists, is not just something happening on the chemical level which has no relevance to human experience. He brings together the chemical formula and the experiencing mind, and unites the two. In that step lies his greatness, his deep intuitive penetration into real unity of process. By making it, he begot a system which was the first great sustained effort to relate human and natural processes in a precise way. We may point out, afterwards, the way in which mechanist and idealist attitudes limit his achievement; but at the core there lies a tremendous grasp of process in all its fullness. With science at such a stage, the only way he can maintain a sense of process is by laying his emphasis on the spiritual act; and if now we can look back on his vast picture and think it a phantom show, it was in its day an incomparable movement towards an integrated vision of man and nature, and of the processes of history. Not even all its metaphysical structure, nor the servile use to which Hegel distorted so much of its application, can blind us to its historical virtues.[3]

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[2] The Hegelian 'leap' is an attempt to describe the nodal points in chemical change. But note that modern science employs here the notion of Dynamic Equilibrium (introduced by Goldberg and Waage in 1865 and developed by Gibbs). The stable state represents a continuous change in two contrary directions which neutralise each other. 'The conception of equilibrium in chemical processes constitutes the central idea of what is commonly termed physical chemistry, which, however, would be better termed theoretical or general chemistry, since it deals with the general principles of the science,' Johnston in Woodruff, 117.

[3] I do not deny that its metaphysical aspects are in a sense the obverse of the political servility and distortion. It is important to realise that the central Dualism (which the Spirit reconciles) expresses the class-division of Prussia

VI

If we approach the problem of a unitary logic from the standpoint of the total scientific advance of to-day, we must begin with the concept of unity—the unity of all life and process and organisation in the universe. Any other primary concept admits a dualism into the heart of our thinking. Then, no matter how much we may talk about unity and process, the dualism will haunt our thinking and in the last resort make it inadequate. But if we begin with unity—as a dialectical monism must—we can go on to inquire how the forms of differentiation develop and how in time the organisation of spirit occurs.

The Hegelian dialectic is hopelessly compromised with a dualistic concept at its point of origin. Hegel tries to overcome the dualism by absorbing both sides of the opposition into spirit, but the dualism remains. To invert Hegel's method is to put matter in place of spirit, but it is not to remove the dualism.

Hegel thus states the dualistic concept at the root of his thought:

> Identity is the definition only of a simple, immediate dead thing, but a contradiction is at the root of all movement and vitality, and only in so far as a thing has in itself contradiction does it move, does it possess an impulse and activity.
>
> Contradiction is not simply the negation of normality, but is the principle of every self-movement, of that which indeed is nothing else than the expression of contradictions.
>
> All things are contradictory in themselves—this proposition expresses the truth and essence of things better than any other.[4]

Contradiction or duality is made by him an essential condition of life and movement because by that means he can have the excuse for bringing in spirit as the transcendent factor, the resolving unity. Such an attitude is diametrically opposed to that of a philosophy based on the concept of the unity of process. The latter must of course show how life and movement involves strains and stresses, a-symmetries and conflicts, inside the unity; but that is a wholly different approach.

(and Europe) which the State (monarchy) 'overcomes' and unifies. Further, the dualistic start is implicated in a need to justify Conflict as War. (Hegel (c) 365, 468, etc.) Thus, Hegel begins with Opposites because of his subjective idealism and his political servility.

[4] See Shirikov, 140.

Marx in his accounts of the Hegelian dialectic makes clear how the origin lies in a subjective dualism:

> But once it has placed itself in thesis, this thought, opposed to itself, doubles itself into two contradictory thoughts, the positive and the negative, the 'yes' and the 'no'. The struggle of these two antagonistic elements, comprised in the antithesis, constitutes the dialectic movement. The yes becoming no, the no becoming yes, the yes becoming at once yes and no, the no becoming at once no and yes, the contraries balance themselves, neutralise themselves, paralyse themselves. The fusion of the two contradictory thoughts constitutes a new thought which is the synthesis of the two. This new thought unfolds itself again in two contradictory thoughts.[5]

And so on. But no matter how far the extending process is carried, its basis in the subjective dualism remains. Hegel's system was undoubtedly the best which could possibly have been worked out in the early 19th century, when the scientific advance rested on the comparatively slight bases I have outlined. It embodies the new structure of thought, which is grasping out at a concept of process. The logical structure of dualities connected by a transcending leap of thought is in a state of close struggle with the deepening process-intuition. But all the intuition has to base itself scientifically upon is the demonstration of chemical change, in which certain quantitative oppositions are seen to result in a change of quality. Hence the key-notion of the dialectic, that in the upward movement through the categories real change is expressed by a leap from opposed quantities into a new quality, a new unity.[6]

IV

What then was the use which Marx made of the Hegelian dialectic? He inevitably turned to it, since it represented the highest possible structure of logic which the total advance of science in his day would support. As inevitably he made a number of changes in it—in its meaning and application, and ultimately in its whole basis. It is of the utmost importance to realise how and in what direction he changed the Hegelian logic and its categories; and we badly falsify the whole relationship if we take the line that Marx was once a full-blown Hegelian idealist and that he then woke up, put *matter* where Hegel put *spirit*, and then proceeded with a ready-made logic

[5] Marx (h) 117.

[6] Hence (Popper can rightly say) the Historicism which sees the present as Conflict —with Unity in the future.

watertight for all eternity. To argue like that is to parody what really happened, and to make a stupid dogmatist out of Marx. The facts are very different.

To begin with, Marx's dissident movement within the Hegelian system brought him (partly with the aid of Feuerbach) into a position where he reacted most rebelliously against the subjective dualism in that system.[7] There lies the crucial point, the great turning point in the history of thought which Marx represents. All other aspects are subsidiary to that, and must be viewed in terms of it.

In his first period of fully creative thought—during the mid-forties—Marx worked from the basis that life was a single process within which differentiations and conflicts arose as both effect and cause of development. He showed how human life was a single process which included the unity of mankind with the larger whole of nature and expressed itself internally in the differentiations, discords, and harmonies of social existence. The external aspect of man in nature was one with the internal aspect of men in society. The resulting pattern was highly complex, but movement occurred as the ceaseless assertion of human unity (universality and freedom) against the limiting forces of nature and social forms.

Then came the long painful relation of this realisation to the facts of contemporary society, the grappling with the isolate of political-economy. The driving force throughout was the sense and understanding of dialectical unity; but the effort to relate the forms of Hegelian dialectics to a specific and minutely-examined section of history meant that Marx's sense of unity, his great individual contribution which had broken through the Hegelian rigidities and idealisms, had to keep on waging a continual fight against the dualisms inherent in the very structure and terminology of Hegel's thought.

Now Marx formulated the relation between his dialectics and Hegel's as follows:

> Although in Hegel's hands dialectic underwent a mystification, this does not obviate the fact that he was the first to expound the general forms

[7] We must recognise the important transition-phase in Feuerbach (ii, 350), who asserts the start must be made in terms of *Ego* and *Tu*—I am Myself for me, and You for someone else, simultaneously. That is, both subject and object. I am a Body; my Self is my Whole Organic existence. On these lines he tries to overcome the Hegelian dualism.

Marx—Plekhanov rightly says, (c) 12f—derived his theory of cognition directly from Feuerbach with this difference: Feuerbach says 'our ego cognises an object solely by exposing itself to the action of that object; but Marx says that our ego cognises an object by reacting upon it.'

of its movement in a comprehensive and fully conscious way. In Hegel's writings, dialectic stands on its head. You must turn it right way up again if you want to discover the rational kernel that is hidden away within the wrappings of mystification.[8]

The fact is that Hegel was, as Marx emphasises, in one way giving a vital exposition of process. What was wrong was his subjective dualism, with its idealist one-sidedness. If you turn a subjective dualism upside down you do not get a fully scientific understanding of unity; you get rather an equal though opposed one-sidedness. And so if all Marx had done was to invert Hegel, his work would be rightly open to the strictures which its enemies have aimed against it. It would have been a one-sided and mechanist materialism.[9]

But to point out this conflict between Marx's genuine dialectical realisation and the Hegelian structure of logic which was the best available at that stage of scientific movement, is in no way to reduce Marx to the thing he was struggling against. On the contrary.

In a rough way, one can of course see what Marx is getting at in the words cited above, and have no quarrel with it all. He sees Hegel with his logic which, derived from natural process, claims an existence in a realm of spirit outside nature. He has given the logic a tug and pulled it down to a level where it must admit that there is no outside-nature existence at all. But the terms in which he states his act shows that the logic is still stubbornly hanging on to its dualistic basis.

One way and another, however, the Marxist realisation (that great discovery in the Forties of the unity of process) kept asserting itself and transforming the rigid and dualistic elements of the Hegelian structure and terminology. To begin with, though Hegel dealt with the process of knowing, his categories are primarily concerned with Things. It is only the Act of Knowing (an act of spirit) which realises process—movement towards the final unity of God. But Marx and Engels essentially put in the place of the concept of Things the concept of Processes. That is the immediate result of Marx's tug at the rigid framework of the categories. He breaks up the categories inside a world of process. And this was the only way in which he could proceed, at that stage of general social and cultural development, to get his great transforming realisations into action.

[8] Marx, Pref. 2nd ed. (a).
[9] Popper (a) II, 95, altogether oversimplifies the problem of Marx's grappling with Hegelian dualism.

Consider such expressions as 'movement and self-movement', meaning spontaneous, internally necessary movement, 'change', 'movement and vitality', 'the principle of every self-movement', 'movement and action', in contrast to 'dead existence'—and who will believe that these represent the very core of Hegel's frozen absolutism, as it has been called. It is necessary to disclose this essence, to understand it, to save it, to remove its shell, to cleanse it—and that is what Marx and Engels did.[10]

So Lenin pointed out. That was precisely what Marx and Engels set themselves to do. Marx's statement about turning upside-down did not mean in the least that he thought a simple act of inversion settled the problem of dialectics. Lenin emphasises that there is still much to be done:

Hegel's logic cannot be applied in its present form; it cannot be *taken for granted*. We must *select* from it its logical (gnosiological) shades and purge it of *mystical ideas*; that is still a big task.[11]

And in his undogmatic way he is always ready to admit mistakes and agree that life always turns out fuller and more complex than one was thinking.

By gad, sir, the philosopher Hegel was right—life does progress by contradictions; and living contradictions are much richer, more varied and pithier than the mind of man originally conceived. I thought that the school was *merely* the centre of a new faction. It turns out not to be so: not in the sense that the school was not the centre of a new faction (it was, and is so to-day), but in the sense that this is not the whole truth.[12]

So he puts himself on record against the *nothing-but* reduction. And indeed it may be worth while to make a brief digression here on the lack of dogmatism in Marx and Engels, on their readiness to admit an error or an inadequacy. Thus, *The Communist Manifesto* in 1848 opened (§ 1) with the sentence, 'The history of all hitherto existing society is the history of class struggles.' Engels in 1888 added a footnote, 'That is, all written history. In 1847, the prehistory of society, the social organisation existing previous to recorded history, was all but unknown.' One could hardly find a more handsomely admitted qualification of a basic generalisation. Again, there is Engel's letter to Mehring (14 July, 1893): 'Marx and I are both to blame in one point. We both placed, and had to place, the chief weight upon the derivation of the political, legal and other ideological notions, with their resulting actions, from economic

[10] See Shirikov, 141.
[11] See Adoratsky, 26.
[12] Letter to Gorky, Nov. 29, 1929, on Bogdanov's Vperyod School on Capri.

facts. Consequently we neglected the element of their form . . . At the basis of this is the undialectical vulgar neglect of reciprocity.' Since dialectically Form and Content are one, to say that one has neglected the Form of development is to admit that one has ceased to be dialectical.[13]

It is clear then that Marx and Engels would have been more than ready to join in the most stringent re-examination of Hegelian ideas and to admit that the use of Hegelian forms might easily involve ambiguities and confusions.

V

The development of the creative aspects of Marxism by Marx and Engels, Lenin and Stalin, has been a continual working-out of the Hegelian insufficiencies under the test of the unity of theory and practice. The dualistic element taken over in the Hegelian logic kept on producing points of strain, and it was precisely at these points of strain that the Marxist realisation of the unity of process reasserted itself and drove forward into new grasps on the reality of historical process. With the turn of the century Imperialism was rapidly maturing and the transformation of society became increasingly possible. Into this situation came Lenin, who picked up Marxism where Marx and Engels had left it and applied everything positive in their work to the immediate situation in its main social, economic and political aspects. In political action he developed the concept of unity, on the one hand practically in the field of direct tactics, on the other hand theoretically by analysing the situation for the stable elements of cohesive activity. Thus he provided the basis for the successful Soviet Revolution. Stalin developed his work along the same lines, bringing out the points necessary for the nurturing and stabilisation of soviet society as a socialist island in an imperialist sea.

Linked with this movement was the general growth of science since the 1890's—since Engels's day. The maturing of the imperialist phase, with its enormous socialisation of method in production, gave science a huge stimulus—even if in other ways it took back some of what it gave and restricted the advance and its applications. The rapid emergence in science of ideas and methods of transformation showed that the basis on which a fuller logic of process could be worked out was at

[13]Writing of the 'eternal' nature of the laws of movement, Marx declared to Kugelmann, 'What can change, in changing historical circumstances, is the *form* in which these laws operate.'

last present. This development in science was inseparably linked with the emergence of democratic forces and socialising modes within imperialist society. The violent contradictions or instabilities of that society led to two terrific wars, but, side by side with the violences, the socialising trends have also gathered strength. As part of the final movement of social transformation on a world-stage we need the development of a logic adequate to the total movement of science in our day. That is the task which Marxism faces to-day. To realise the creative side of the Marxist development from Marx to Stalin means to break through the last bonds of Hegelianism into a fully scientific dialectic.

VI

One brief example will serve to show how essential Marxist method has beaten against the Hegelian dualism. In the system of Hegelian logic one begins with oppositions; and to apply that system simply in a form of materialist inversion one would have to assert that class-society exists as two opposed classes which come together in opposition, till out of the quantities of their combination there leaps the totally new thing, the totally new society. In fact society is a unity out of which there painfully and slowly emerges new polarities, which at long last crystallise into class-conflicts and discords. The class-forms develop inside society; they do not come together to form society.

Vulgar Marxism, or distorted Marxism, in fact does state the social situation in these terms. But Marx, as we saw in Chapter 1, §iii, never lost sight of the fact that conflict and division occurred within a unity. Lenin continually stresses the point. He insists that society is a unity inside which continual differentiation and contradiction develops and that through history we see the same 'immanent emergence of differences—the internal objective logic of evolution and the struggle of the differences of polarity'.[14]

Finally, it must be stated with all possible emphasis that *Marxism is in no sense tied down to Hegelian categories and terms.* Marxism is bound to nothing except the belief that the external world exists and that the laws of development are

[14] See Shirikov, 256. One reason why Hegel begins with a dualism is because he thinks of class division as eternal.

knowable.[15] It used the Hegelian logic as the best logic devisable in the 19th century to deal with process. But the very basis of its use implied the practical certainty that as the total grasp of process deepens a more adequate system of logic would evolve.[16]

[15]These premises involve also that of the unity of process

[16]The fear that if one accepts non-Hegelian unitary terms one loses grip on the essential causal factors, is baseless. For the unitary viewpoint always keeps in mind the relation of Man to Nature. Then *production* must appear as the vital point of dialectical union and must provide the primary basis of definition of man and history. Once that is seen, the relation of culture (art, science, technique) to economic activity cannot be smudged out by idealistic confusions; the acceptance of a multiplicity of forces at work in men cannot mean that one flatly gives all and any an equal value. Production (its relations, modes, forces) remains the key of any given moment of history (and that always involves in class-society the forms of exploitation or surplus-value). *This is an important point I wish to stress,* since its clarification would obviate a great deal of misunderstanding about the ideas I am advancing. Marx never forgets that production must be viewed as the source of 'self-movement' in society and as man's organic union with Nature. Such originality as this book has lies in an effort *to return to Marx's profundity in this matter, which is crucial.*

CHAPTER TEN

Towards a Fuller Dialectic

THE EXAMPLE (given at the end of the last chapter) of the way in which the dualistic aspect of Hegelian dialectic can lead to a quite undialectical notion of conflict may seem too childish and contrary to the facts of experience to deceive anyone. Yet it is certainly true that the dualistic emphasis on conflict can become so sharp as to lead people to think in terms of a simple opposition of things or parts and not in terms of differentiations within a single process. In fact, I have found it extremely difficult, often impossible, to bring such persons to make the dialectical relation to the unity of process in any concrete way or to grasp the theoretical implications of such a relation. For them unity has become a phantom of the future, something towards which one wants to move by overcoming the existing contradictions; it is not a living component—or rather the living whole—which alone gives meaning and direction to the conflicts within.

To take a slightly more abstruse case. A dialectic which still embodied the Hegelian dualism would find no difficulty in the situation discussed in Chapter 4. Its exponents would say that Environment and Genetical Variation made up two sides or opposites in the total process of evolution, and that that was sufficient explanation.[1] For the rest, the law of quantity changing dialectically into quality would explain the general movement. But the unitary dialectic would deny that such a dialectic had really touched on the problem of real change, and would insist on going on to penetrate the cell to find how all the forms of evolutionary development occurred as differentiations out of a single process or reality.

Again, take the situation left by Newton, in which movement arises through the operation of the laws of mechanics (in impact, etc.) or by attraction mutually exercised by two bodies

[1] After writing the above I found that one thinker had actually done this—set Variation as thesis, Selection as antithesis, with Evolution as synthesis. Cf. Ch. 4B above. In the Hegelian dualism, however disguised, the unification (e.g. of Selection and Genetics) occurs only *in the thinker's head*; it is not shown as a concrete process-fact.

according to the law of gravitation (which gave the quantitative formula of this force). Here we could say are two opposites, one direct impact and the other action at a distance, which become one in determining the position of an object. And when the laws of magnetic and electric attraction and repulsion were found, they proved to be quantitatively identical with Newton's law of gravitation; these were therefore interpreted as actions at a distance. Then Faraday came along with an explanation which dropped all ideas of action-at-a-distance; he explained electrical attraction and repulsion of two objects by processes occurring in the intervening medium, the dielectric, which was propagated in time from place to place. Clerk Maxwell later gave these ideas mathematical form and introduced the general notion of an electric or magnetic field which carried the forces. He deduced the velocity of the propagation of electric and magnetic forces (which in empty space was found to be identical with the velocity of light). The upholders of Newtonian dualism fought hard, but had to abandon the theory of distance-action in the electro-magnetic field. Then came their final rout by Einstein, who brought in the idea of the gravitational field and killed the idea of empty space. *A single field of forces took the place of the dualistic Newtonian space.*[2]

That development is a perfect example of the way in which the idea of two opposed forms or forces within a single relationship (mechanical action and action-at-a-distance united in movement) gives way to the idea of a single process in terms of which the opposed or contradictory forces can be understood as different aspects.

The problem of dialectics is then only barely started off when we can fit things or processes into the Hegelian categories of opposition.[3] The decisive step is taken when we go on

[2] Another opposition, going back to Newton, came to a head about the same time when in 1900 Planck showed the discontinuous increments in energy in the heat radiated by a hot body; and in 1905 Einstein showed the corpuscular (photon) constitution of light (through electrified particles shot from a sensitive plate when a light beam fell on it). Planck connected the two aspects of light (particles and continuous wave) in his Law that the kinetic activity of the particles is a definite number of times the number of vibrations per second of the wave.

[3] Example of this dualistic attitude : 'The history of the physical sciences in the 19th and 20th centuries shows a steady drift away from the mechanical views of Newton with a set of irreducible dialectical opposites such as—wave and particle, matter and energy, statistical and determinate, aggregating and segregating processes'. Our dialectical task is precisely to *reduce* this opposition to unity.

to find *concretely* the single stream of process from which they both arise; and this means much more than talking about their being subsumed under categories of dialectical opposition. It means actually showing how the differentiation occurs within the unity of process.

In making this statement we are not denying the great importance of Hegel's definitions. Without his work there would have been no solid basis for the movement to a subtler and fuller dialectic. As Engels said, 'We cannot expect Hegelian philosophy to have been concerned with a subject which natural science had at that time not yet placed upon the agenda.'[4] The full development of the unitary aspects has been dependent on a whole series of converging scientific developments.

II

It may be asked what developments had occurred between the time when Hegel laid down his schemata and the time Marx and Engels developed their system. That question may best be answered by Engels himself, since towards the end of his life he drew up a statement of the main achievements in science during his lifetime. He says that science in general had been 'transformed from an empirical into a theoretical science, and, by the integration of the results achieved, into a system of materialistic knowledge of nature.'

> The mechanics of gases; newly created organic chemistry, which stripped the last remnants of incomprehensibility from the so-called organic compounds, one after the other, by preparing them from inorganic materials; the science of embryology which dates back to 1818; geology, palaeontology, and the comparative anatomy of plants and animals—all of them provided new material to an unprecedented extent.[5]

But there were three great discoveries of extreme importance. (i) The proof of the transformation of energy obtained from the discovery of the mechanical equivalent of heat (by R. Mayer, Joule and Colding) 'The unity of all motion in nature is no longer a philosophical assertion but a fact of natural science.' (ii) The discovery of the organic cell by Schwann and Schleiden: 'the cell as the unit, out of the multiplication and differentiation of which all organisms, except the very lowest, arise and develop . . . The hitherto incomprehensible miracle resolved itself into a process taking place according to a law essentially

[4] Engels (a) 22.
[5] Engels, App. B (a).

identical for all multi-cellular organisms.[6] (iii) The Darwinian Theory of Evolution.

We may heartily agree with Engels as to the tremendous import of these discoveries. And it is worth noting that what he acclaims in them is the great advance in unitary thinking 'All the innumerable operative causes in nature, which until then had led a mysterious inexplicable existence as so-called "forces"—mechanical force, heat, radiation (light and radiant heat), electricity, magnetism, the force of chemical combination and dissociation—are now proved to be special forms, modes of existence of one and the same energy, i.e., motion.'

But in his enthusiasm he heavily overstates the case when he says, 'With these three great discoveries, the main processes of nature are explained and traced back to natural causes. Only one thing remains to be done here: to explain the origin of life from inorganic nature.'[6] The earlier chapters of this book will have given some idea of how far we have to go before a full grasp of process is attained. And if we look at Engels's three 'discoveries' we find that the first covered transformation only in a mechanical quantitative aspect; the second did not explain at all how and why organic development occurred; and the third was an account of evolution in terms of a single external factor.[7]

However, the movement of thought which Engels sketched was of tremendous importance. By achieving a rapid unification on the mechanical level, plus the first one-sided account of evolution and the empirical discovery of the cell, it laid the basis for the next stage, which I have attempted to describe, at least in some aspects, in the earlier portions of this book. It made possible the movement further on into the concept of time-space as an indivisible reality, into the discovery of the

[6] One important cell-discovery out of his ken was that of H Driesch, about 1895, that W. Roux had been wrong in thinking eggs showed a 'mosaic' development (i e. if injured, would show a lack in the completed organism, representing the injured section). Driesch showed that several blastomeres could be removed, all the blastomeres shuffled, etc., yet a normal embryo would result; any moiad of the egg-cell could form any part of the embryo This discovery shattered the mechanical concept of cellular differentiation, etc. (For Driesch's idealist explanation, Broad (b) 123; Alexander (a) ii, 65.).

[7] Compare here Whitehead's list: (a) the idea of a field of physical activity pervading all space; (b) atomism, which includes the cell-theory in biology—which introduced the idea of organism into the world of microcosmic beings the idea of the atom as ultimate entity fading when Pasteur 'showed the decisive importance of the idea of organism at the stage of infinitesimal magnitude', (c) law of conservation of energy (permanence underlying change in energy-transformations) and (d) evolution (with change as the dominant) Whitehead (p) 1·3ff

ceaseless transformations of the atom, into the reaffirmation of an organic outlook which would preserve the hierarchical structure of levels, into a new concept of dialectical unity in the spheres of history, anthropology and psychology. But all these crucial developments are post-Engels, and many of them have occurred or come to a head only during the last decade or two.

The development which Engels sketches is just what we would expect from the extent to which Marx and he had been able to transform the Hegelian logic in the direction of a true logic of process. That he and Marx succeeded so well in terms of the problem set them by the total advance of science in their day is an argument, not for sheltering behind their definition as the last word on dialectics, but for fighting to develop dialectics in terms adequate to the total situation in which we find ourselves. When Rutherford and Soddy showed that the radio-active atom broke into two parts, one of which was a particle (such as the alpha or beta) and the other an atom of a new element which required a new name, they had taken the problem of transformation right into the heart of matter-energy, of space-time.[8] When Engels spoke of energy-transformations, he meant the only ones visible to the science of his day—the mechanical changes of heat into light and so on. Rutherford's statement involved a quantitative aspect,[9] but it went beneath all mechanical issues into the revelation of transformative process as integral in every conceivable 'unit' of matter-energy. It was no longer a mechanical problem of quantity turning into quality at a certain phase of development. It was a dialectical problem of quantity being *one* with quality—of the unity of process involving by its very nature a dynamic quantity-relation which was also a basic quality-change.

III

To approach the problem from another angle: the very concept of *energy* meant that the concept could not remain at the level of mechanical transformations.[10] For energy in fact involves organic pattern. As Whitehead says:

> Mass becomes the name for a quantity of energy considered in relati

[8] I. B. N. Evans, 39.

[9] He said, 'The normal or constant radio-activity possessed by thorium in equilibrium value, where the rate of increase of radio-activity is due to production of fresh active material, is balanced by the ratio of decay of radio-activity of that already formed.'

[10] By 'mechanical transformations' I mean qualitative energy-changes conside purely from the angle of Mechanics and Dynamics.

to some of its dynamical effects. This train of thought leads to the notion of energy being fundamental, thus displacing matter from that position. But energy is merely the name for the quantitative aspect of the structure of happenings; in short, it depends on the notion of the functioning of an organism.[11]

Thus Koffka states the same issue:

In my opinion this famous antithesis of quantity and quality is not a true antithesis at all. It owes its popularity to a regrettable ignorance of the essence of quantity as used in physical science . . . It is impossible to discuss here all the functions of quantitative measurement in physics. But it is fair to say that a mere collection of numbers is never what the physicist wants. What he is frequently interested in is the distribution of measurable characteristics in a given volume and the changes which such distributions undergo . . . Measurement has then the role to test the validity of the equation for the process which it is meant to describe, i.e., of the relationship established. Such a relationship, however, is no longer quantitative in the simple sense in which any one concrete number is; its quantity is no longer opposed to quality. The misunderstanding arises when one considers only the individual facts with their measured quantities, overlooking the manner of their distribution.[12]

He takes the example of a soap-bubble, and points out that the description will be quantitative in so far as it says of each particle that it is here and not somewhere else, qualitative in so far as it assigns a definite shape with all its peculiarities to the distribution. Once we see these two aspects of the account it is hard to decide whether we are speaking quantitatively or qualitatively. The same fusion is true of any account of a body in motion. Thus, when the velocity varies with the sine or cosine of time, the body executes a periodic movement which is qualitatively different from a mere translatory movement.

We conclude from these examples: the quantitative mathematical description of physical science, far from being opposed to quality is but a particularly accurate way of representing quality. I will, without proof, add that a description may be quantitative without being at the same time the most adequate one. Of the two analytic equations for the circle: $x^2 + y^2 = r^2$, and $r =$ constant, the second expresses the specific quality of the circle more directly and hence more adequately than the first.

It would seem then the opposition of quantity to quality in the form given by the Hegelian dialectic is the expression of

[11] Whitehead (a) 149.
[12] Koffka (a) 13f.

transformation considered on the mechanical level [13] When later in the 19th century the concept of energy begins to supplant the old static term matter, the unity of quantity and quality in all mathematical description begins to show up Finally, after Rutherford broke up the idea of the permanence of the atom and atomic structure, the identity of mathematical relationships and organic patternings is grasped, and the Hegelian opposition falls hopelessly down

Lentin, a French Marxist, thus replies to Sartre's claim that science and mathematics deal with a quantitative universe, and that therefore dialectical unity comes from outside the world

> What a fury to affirm that even mathematics is the science of quantity Does one ignore all its purely qualitative aspects? One has only to turn over the pages of any periodical to find theorems of qualitative analysis (among others the qualitative integration of differential equations)
>
> And if one is not familiar with the higher maths, one can, with elementary examples, grasp the fact that this idea of totality, which is truly the resort of all dialectic, shows itself at every step The mere fact of having traced a circle in a plan modifies the plan in its totality As the fact of putting a magnet on a table creates a field, the irruption of the circle creates a circular field People begin to know how to resolve problems when they feel this modification of the totality, and that they must think differently according to the magnetic lines introduced by the initial figure
>
> All is quality, different qualities [14]

But if quality and quantity are thus inseparable at every moment of the modification of the unity in which they are included, then the change of quantity into quality is in fact the change of a pattern with certain quantitative and qualitative aspects into another pattern with different quantitative and qualitative aspects We must go deeper into process to discover the clue to the nature of transformation

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[13] Engels (f) practically admits that this formula basically generalises chemical activity 'chemistry may be called the science of the qualitative changes which take place in bodies as the effects of changes of quantitative composition This was already known to Hegel'

The mechanist nature of Hegel s dialectic appears in its inability to grapple with the complex facts of change, with their *multiple ranges of possibility* Bogoslavsky says correctly, of the triadic movement, that it would, if true, ensure an inevitable, automatic, and continuous progress in everything Any cyclic chemical process, the degeneration of the tissues of a living organism, or of a certain species, or of civilisations, or even of philosophies, prove that processes of this sort (regression) *do* exist,' 220

[14] Lentin, 113 Note Lentin's emphasis on the unity of process And note how Sartre's objection is only a crude form of the abstraction of Unity to which Whitehead finally resorts

In physics that quest includes the problem of showing how increase of evolutionary organisation is one aspect of a total process also described by the second law of thermodynamics (which declares that energy capable of doing work is constantly decreasing while bound energy or entropy is correspondingly increasing). In the course of these essays I have continually raised the question of the concrete issues of transformation, and there is no need to recapitulate them here. But it will be clear that all the fundamental problems faced by contemporary science lead to this point. Mechanical formulas are no longer sufficient as descriptions of process and transformation. In every science a method must be developed for grasping concretely what happens in transformation and how the actual changes, while occurring as leaps, also occur as differentiations, assertions of a new symmetry or balance, within a single stream.[15]

IV

Another Hegelian formulation that at once arouses suspicion if one approaches it with the concept of the unity of process is that of Self-Movement. What does this mean? We can accept it if it means that only dialectically relevant factors in the internal whole of a process are to be considered in dealing with the movement of that whole. But if it means that any whole, other than that of the universe, is self-moved and can have its movement abstracted from the environing forces which make up a larger whole with it, then we must flatly deny it.[16] True, in dealing with any isolate we are concerned with the laws of its internal movement and restrict ourselves to what goes on inside the isolate. But that is not to say that the isolate has self-movement in itself or that in the last resort it can be thought of apart from the fuller fields of which its movement is an aspect. In Lenin's words:

A particular entity, an object, a phenomenon, etc., is (only) one aspect of idea (truth). For truth there are needed still other aspects of actuality,

[15] "The central idea in Dialectical Materialism is that of Transformation. The problem is at the same time: How do transformations occur and how can we make transformations occur? The approach to this problem lies not in a philosophical analysis and definition of transformation, but in an examination of all observable facts in the universe as they are known to us from various sources, scientific or historical, but more particularly in those political and economic transformations in which conscious action takes part.' Bernal (b) 90. That goes to the heart of the problem ; but why omit 'cultural' in the last sentence?

[16] 'And we cannot speak even of the Universe in this context in a Laplacean sense.'

which also seem to be independent and particular (existing peculiarly for themselves). Only in their aggregation and in their relationship is truth realised.[17]

The following definition is given of self-movement: 'The movement of a thing, its self-movement, defines its internal nature, in its uniqueness, its quality. . . . The quality of a thing is given by the particular kind of movement that is fundamental to it.'

'If this means by movement the mechanically-definable *movement, it is false. The quality of an object or process cannot* be reduced to mechanical levels. If it means the total complex of patterns and transformations, it is true, but seems an extremely clumsy and antiquated way of saying what it says—a way which is liable to arouse all sorts of misunderstandings by its idealist terminology.[18] What use, for instance, is it to us in answering the question: *What is the quality of human life?* No use at all; whereas it can be used to distort the issues and to restrict human reality to some particular measurable aspect.[19]

[17] See Shirikov, 251. The definition is by Shirikov.

[18] Note that the origin of the category of Self-Movement lies in Hegel's wish to prove that ideas are capable of a sort of self-creation and self-development *out of nothing*.

[19] My case against Hegel's Logic of Mechanics applies equally to Bogoslovsky's Logic of Dynamics (with its Principles of Polarity, Partial Functioning of Concept, Continuity, and Quantitative indices).

CHAPTER ELEVEN

Some Suggested Formulations

I

IF THE REMARKS in the last chapter are at all correct, the Hegelian categories and terminology are based in the mathematics of Mechanics; and though Marx and Engels and Lenin drove them to their limit away from this basis, a breaking-point was reached in the 20th century. Although the total advance of science which underlay this culmination has only become apparent during the last generation, Lenin and Stalin showed their awareness of the changing situation in the political and social sphere and in the formulations they worked out to meet the needs of that sphere.

Roughly, the problem is to devise a dialectical logic with method and terms drawn from sciences of life rather than from the mechanical sciences.

II

First, we must start from the concept of the unity of process; and this brings us face to face at once with a continual dualism that asserts itself in the use of the term *Matter*. What does the term mean? If it means the Universe, Nature, the Totality of Processes and Structures, then we must strictly use it in that sense; and we must never oppose it to Mind or mental processes. For mental processes are only a particular aspect of matter. The term Dialectical Materialism is then a tautology; for Matter merely refers to the whole of nature and dialectics is the logic of moving wholes. Dialectical Materialism then means the logic-of-wholes of the whole.

On the other hand, if we are using matter or material in a specific sense and material means 'related to the permanent aspects of process',[1] the term Dialectical Materialism implies

[1]This, like most of the definitions used in this chapter, is taken from Whyte's Glossary. His central definition is Development 'Decrease in a-symmetry. The simplest type of development is the separation, persistence and extension of symmetrical form.' Process is 'form within change' and form is recognisable continuity. Nature is used for the Whole Process.

a dualistic attitude to Nature, in which Matter, the more permanent aspect, is opposed to Mind. Since such a dualism runs counter to every principle of dialectics, we are forced back to the first interpretation. But then what happens to the term Dialectical Materialism, which was developed as a polemical term in attack on Hegelian one-sidedness?

We cannot be too precise or exacting in this matter of basic terms. What matters is not only the definition we would give if pushed into a corner but also the whole interplay of suggestion and allusion which the terms involve. A Dialectical-Materialist is wedded to the concept of the unity of process, which utterly denies the dualism of Mind and Matter; he is in no way denying the effective existence of Mind; and yet by the use of the term Materialism he is liable to assume Mind as something less important by definition than Matter, and thereby to fail to consider the real part played by mind in the formative process of humanity.

The question is not easily settled. In writing this book I have several times had to speak of Man and Nature as dialectically opposed. But what I really meant was the dialectical unity of the part of nature which is Man with all the other parts which are not Man. Yet the opposition of Nature and Man inevitably, through the myriad overtones and undertones of suggestion created in the history of thinking, summons up other ideas and emotions than I am there intending.

The polemical bias in the term Dialectical Materialism tends to make it say either more or less than it really means to say. I wish therefore to raise strongly the problem of its continued use.[2] It might be better to use the terms *unitary dialectics* and *process-logic*, which say all that *Dialectical Materialism* wants to say—that all structure and process are inside nature and are a part of history—but do not raise the ghosts of departed dualisms. If, however, we continue to use the term Dialectical Materialism, let us keep continually before us the fact that it prohibits us from opposing Matter and Mind.[3]

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[2] "We come . . . to a monistic conclusion, in that we believe that there is only one fundamental substance, and that this possesses not only material properties, but also properties for which the word *mental* is the nearest approach. We want a new word to denote this X, this world-stuff; *matter* will not do, for that is a word which the physicists and chemists have moulded to suit themselves, and since they have not yet learned to detect or measure mental phenomena, they restrict the word " material" to mean "non-mental", and "matter" to mean that which has "material" properties,' J. Huxley (c) 243.

[3] In argument on this point, fellow-Marxists have contended that the old term can still be used, as it merely implies that in cosmic stages Inorganic Matter

III

All differentiation, contradiction, unbalance, then, occurs within a unity. That is our primary concept. What occurs to cause differentiation, and how do we describe development?

If we are to seek our terms in the sciences of life, it would seem from our glances at biology and psychology that we must define development as occurring through instability in the organism. Thus, the egg became the embryo through the explosive shock of fertilisation, which set the plasm into a furious movement of construction and extension of form. The potential in the plasm is transformed into the actualised structure of the embryo. It is as though a violent disequilibrium has begun, and to overcome it the plasm must work out the full potential structure. The embryo is created when this formative process has again reached a definite point of stability. A stable level lies at the beginning and the end of the burst of development.

Stability is re-attained by a re-assertion of symmetry.

> Eggs of most bilaterally symmetrical animals begin their development as radially symmetrical structures and, therefore, show a polar axis. But at the moment after fertilisation when bilaterality appears in such an egg, we can no longer speak of an axis. In a bilaterally symmetrical organism—egg or adult—there exists no line common to planes as in a radially symmetrical one. Here, accurately speaking, we can only use the term, plane of symmetry.[4]

The organising forces in the egg reveal themselves as controlling planes of symmetry and axes of polarisation; and it is when the potential extension within the egg has reached its limit along these planes that stability reappears. Stability is an aspect of symmetry. But in reading this definition we must always understand it in terms of the accompanying tensions within and without.

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came before Organic, that Mind came at the end of the series and that productive activity is the basic element in human history. Certainly this is what Marx and Lenin meant by the term. The problem is whether at this point in the development of Marxism new needs do not outweigh those which made the old term necessary for Marx and Lenin. There can be no question for a Marxist that the point those thinkers were making was sound. What changes is the emphasis, the angle of orientation, and what is now necessary is the movement of Marxism to a deepening sense of dialectical unity.

[4] Just (b) 102. The assertion of symmetry takes many forms of course in terms of the plasmic basis and the tensions of environment. That is the biological counterpart of the Law of Prägnanz; Köhler (c) has attempted to deal with it.

Physicists like Curie and Mach have long past been impressed by the symmetry of many stable forms in nature. Curie made an effort to advance towards the generalisations we are here attempting. He stated that 'it is a-symmetry which creates the phenomenon'.[5] Köhler formulated the converse: that a system left to itself will, in its approach to a time-independent state, lose a-symmetries and become more regular.[6]

In the simpler case of molecular systems, Whyte points out, simple static forms separate out and tend to perfect their symmetry. If conditions allow, the process is repeated and the form grows. Here development is seen as the simple separation-out, persistence and extension of static forms. This process occurs not only in crystallisation and the formation of inorganic molecules, but also in the 'reproduction of molecular units of organic origin (polymerisation; protein synthesis; the multiplication of genes, and possibly of viruses and enzymes; and the growth of the cellulose walls of plants).'[7]

In organic life we cannot expect to find process reaching a static and perfected symmetry. The extension of structure by the orientation of new molecules stays subject to the pattern of the whole organism. When life fails and the processes lose their organic character, they end in the static symmetry of inorganic forms. The general law, however, still applies:

> Where such separation of (static forms) cannot occur, the process of development consists in the mutual adjustment of the parts of a complex system, as for example an organism and its environment. Here no static equilibrium is reached, but there is a developing process-equilibrium *within the system as a whole. The processes of the organism and of the* environment are in equilibrium and life is stable, within limits. But in the process of organic development there is no close approach to complete symmetry. Form is developed, in the symmetry not of static form but of processes in equilibrium.[7]

In the working-out of the Gestalt minimum-maximum principle, with its fully-articulated simplicity as the culmination of process, we see the same principle. Gestalt seeks to show

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[5] Koffka (a) 108.
[6] Köhler (a) 257ff.
[7] Whyte 33f. Alexander (b, 304) says much the same thing in general terms: 'New creations which lend an unexplained and strange flavour to existing institutions and remodel them; external habits and ways of life retained but their inward meaning transformed; immense complexities of elements, hitherto chaotic, now gathering themselves together and as it were flowering into some undreamed simplicity . . .'
[8] For the basic symmetry-formations of plant-life, see H. Keyser.

how the tension between organism and environment results in an articulated form stabilised at the fullest possible simplification. The shift towards a minimum of energy in a gestalt is a process-movement towards a time-independent state—i.e. a fully symmetrical form.[8] In an organism like the human being this movement cannot result in a physical separation out; but it does result in the crystallisation of the spiritual act, the gestalt, which reaches its most powerful expression in the projections of art and science.

IV

It may be worth pointing to an abortive attempt by a Marxist, Bukharin, to develop a thesis of equilibrium in relation to growth. 'If there were no conflict', he said, rightly enough, 'the world would be in a condition of unchanging stable equilibrium, i.e. complete and absolute permanence.' He goes on, 'It is certain that such an absolute state of rest cannot possibly exist. We must therefore reject a position in which there is no contradiction between opposing and colliding forces, no disturbance of equilibrium.' He seeks to illustrate his position by the equilibrium of the solar system and examples of 'adaptation' in biology. Then he passes on to society and argues that society 'in one way or another is in equilibrium with nature'.[9]

'In all these examples', he says, 'it is clear that we are dealing with one phenomenon, that of equilibrium. This being the case, where do the contradictions come in? For there is no doubt that conflict is a disturbance of equilibrium'. So he argues that there are states of rest when the conflict of opposing forces is concealed. Any change of forces disturbs the equilibrium, which is in a state of 'internal contradiction'. The newly-established equilibrium is the new basis, consisting of the readjusted forces. 'It follows that the "conflict", the "contradiction", i.e. the antagonism of forces acting in various directions, determines the motion of the system.'

Against this system other Marxists argued that Bukharin was totally mechanist, since (i) all consideration of qualities is

[8] Köhler (a) 250. In the case of a relatively small Sub-System with a large Reservoir to draw from: then the total system that moves to a minimum includes both Sub-System and Reservoir. We find that the former draws as much energy as possible from the latter, so that after the process its energy-content is greater than before. Köhler (c, 533) applied this principle to organic growth and increasing articulation.

[9] Bukharin (b) 73.

dropped, (ii) rest and motion are insufficient to cover the immanent movement (Hegelian) category, (iii) dialectical unity-and-contradiction is reduced to an impact of oppositely directed forces, (iv) distinction of organic and inorganic disappear, and (v) all inner activity or self-movement is ignored, (vi) the emergence of new qualities is unexplained.[10]

These contentions are substantially correct. But it is a pity that the critics contented themselves with correctly showing where Bukharin was wrong. It might have been more important to ask if there were any possible virtue in his line of approach. True, he reduced everything flatly to a mechanist level; but he had the one point in his favour that he was trying to break through the metaphysical dualism lingering in the Hegelian categories and to demolish the abstraction of self-movement by pointing out that society's changes are dialectically related to the extent of the control of nature.

Bukharin's thesis is of interest then in showing a Marxist attempt to use the concept of equilibrium and in acting as a horrible example of the wrong way to use it.

V

When a process leads to the construction of a system which, with its internal developments, tends to persist and extend its form (by a repetition of the process by which it was formed), we can speak of Structure.

Structure, however, is not sharply separated from process, which may be defined as Form within Change. In Structure the process is approaching a symmetrical state. In actual events structure is involved and modified by process.[11]

VI

Needham provides as a working account of what happens in evolution as we rise from the viruses and protozoa to the social primates:

(i) a rise in the number of parts and envelopes of the organism and the complexity of their morphological forms and geometrical relations;

(ii) a rise in the effectiveness of the control of their functions by the organism as a whole;

(iii) a rise in the degree of independence of the organism from its environment, involving diversification and extension of range of the organism's activities;

[10] See Shirikov, 375ff.

[11] Again the definitions are based on Whyte (a), *Glossary*.

(iv) a rise in the effectiveness with which the individual organism carries out its purposes of survival and reproduction, including the power of moulding its environment.[12]

In such a situation the maintenance of anything like equilibrium between organism and environment is clearly a highly complex affair; and men keep 'extending their structure' by the continual projection of gestalts, which express the tension of organism and environment and stabilise it by powerful symmetries. Therein lies the active symbiosis between men and nature. Among the gestalts—supreme among them—are the social and cultural formations by which men keep their life stable.

VII

But if the stability is being forever disturbed by changing tensions between men and nature, which are dialectically one with changing tensions and conflicts inside the group, we need a further concept to explain the relation between the stable system and the processes of its development.

The concept is that of Dominance—the relation of a structure to the processes which it facilitates. A system of processes connected by relations of dominance is a hierarchy.[13]

Among men it is productive activity which facilitates process, which maintains and extends the stable relationship between men and nature on the one hand, and which maintains and extends the stable relationships within society on the other.

But by the very virtue which makes men into men, we must not abstract 'productive activity' as a thing in itself, a matter of statistics or measurable relationships. Statistics and measurable relations exist, and for certain purposes it is necessary to know them; but we misunderstand the concept of Dominance if we think the situation can be reduced to them. The economic situation can never really be isolated from the cultural and social situation, and vice-versa. For the Dominance which alone makes human productivity possible involves an Organising Process (the dominant process in the hierarchy of an organism or stable system); and for men the Organising Process is fundamentally spiritual as well as social.[14] That is,

[12] Needham (a) 211.

[13] Again, the definitions are from Whyte.

[14] This is directly expressed by the fact that the Child becomes human (enters by speech into society and its cultural traditions) before it has any part whatever in labour-act. Cf. Marx on the 'ideal form' implicit in productive act.

it is related to the facilitation by a brain of the formative aspects of organic process and to the record in the brain of organising processes which facilitate delayed responses.

Therefore, the whole human tradition—which we roughly call Culture—is inherent in the Dominance; and out of the complex instability of the whole social system (in its relation to nature) and its internal tensions and conflicts there comes a ceaseless formative process which it is the aim of men to facilitate. In so far as they succeed, they succeed in achieving stability. Because of this dominant and integrative function of the brain, men can plan and invent. They can project organic symbols in art and science, and separate off gestalts as techniques. They are never closed in by the actual, the immediate relations. They can look backwards and forwards; and out of a situation of stress and disequilibrium they can wrest the potential form, the form which will create a higher stability in the future.

VIII

A glance back at the primitive tribe will clarify these comments. Caudwell has rightly said of primitive poetry or dance:

> Such an instrument is socially necessary when no visible or tangible cause exists, and yet such a cause is potential . . .
>
> Thus poetry, combined with dance, ritual and music, becomes the great switchboard of the instinctive energy of the tribe, directing it into trains of collective actions whose immediate causes or gratifications are not in the visual field and which are not automatically decided by instinct.[15]

Culture is the sole directive force in human life; and the concentrations and releases of organic energy in dance and other art-forms are required at every stage. Otherwise the unifying and centripetal force or form facilitating human process would be lacking. But though culture is thus dialectically related to economic activity (the degree of control of nature), we cannot simply add, as Caudwell does, 'This is how poetry grows out of the economic life of a tribe.' For there would be no *human* productivity without poetry and the other forms of culture. One grows out of the other, and there is no one-way traffic. The gestalts from which productive techniques and group-consciousness alike derive are inextricably bound up

[15] Caudwell, 17f

with the gestalts of dance and song. All these gestalts exist together in a totality of ceaseless transformations.[16]

IX

The key-weakness in the Hegelian categories, it will now be clear, lay in that of self-movement, which enabled thinkers to abstract society from nature as a system activated by its own immanent laws of motion. This abstraction was necessary, on the lines indicated in Chapter 2, for the working-out of the first great isolate of history by Marx; but the idealist terminology of Hegel has since exerted a malign influence by holding Marxists back from getting the isolate fully into focus and from taking in due time the next large-scale step in dialectical thinking. Marx himself never lost sight of the embracing whole, man and nature.

In the passage from *Capital* cited at the end of Chapter 3, he insists that the enveloping unity of man and nature is something which exists at all phases of history, class or non-class; it could only end if man got outside the universe. Marx insists that, by acting on nature and changing it, man at the same time changes his own nature. 'He develops the potentialities within him, and subjects these inner forces to his own control.' Note that Marx is not saying that by changing society man changes himself, but that the crucial point of relation is between man and nature.[17] This attitude of Marx, fully in key with his carefully defined positions in the 'forties, can only be understood if we keep a unitary focus throughout. Marx, while

[16] Bogoslavsky, 150. 'The essence of dynamic reasoning is the establishment of continuity between two opposite poles of a unit of thought which tends to terminate in a realisation of their qualitative identity. Efficient thinking must start with an assumption of continuity in potentiality, and work for its actual realisation.' See Lefebvre (b, 216) on Idea as the unity of concept and the real, essence and existence. 'Human beings in their movement towards "more" reality and towards "otherness" create the ideal.'

[17] Note that there is no contradiction between Marx's statement and the fact that man also in the process changes society. By 'man' Marx is simultaneously thinking of man in his personal and social being. In the relation to nature both aspects are simultaneously involved. 'The universal human essence is determined as conscious domination, rational, "planned-out" (following a scientific plan) of social man over nature on one side and on the other side over his own products (gold, merchandise, the market with its precise economic problems—institutions, the State, with their political problems) . . . It is in the total movement of knowledge and of human action that each "essence" comprehended by thought or realised by social life finds its foundation, the "raison d'être" of its existence. The idea, in so far as it takes in this total movement (idea of knowledge and idea of man) is defined then here as *unity of essence and existence* . . .,' Lefebvre, (b) 217.

naking the necessary scientific isolate for the foundation of a cience of history, takes care to hand us the key to the next hase of dialectical comprehension.

Consider some of the consequences of this step which insists t every point on relating the social system to nature. It follows t once that the total relations within society are dialectically no with the total relations between society and nature. That he stage of social development is dialectically one with the tage of technical development—since it is by techniques (in he full sense which includes science—and in the last resort, rt too) that men actually keep their active contact and relation vith nature.[18]

One obvious advantage of this approach is that cultural and conomic forms and forces are at once brought together in real ct—whereas a theory of inter-related structures keeps them part. Social relations, economic formations, and technical nethods are seen as dialectically one, and there is no division etween them and the whole cultural field implicated in the elease of human potentiality by production.

The relations of individual, society and nature, thus stated, nust not be understood in any sense of static equivalences. rue, one is saying that the total relationships within society re one with the degree of control of nature which the society as achieved. But this statement must be grasped dialectically. aken mechanically, it would amount to a rationalist notion hat man advances along a single track, building up a harnonious and enlightened society to the extent to which he chieves knowledge. There is a limited truth about such a ormulation; but only a limited one. In actual fact the historical levelopment is very much more complex. One has only to glance round in the present year 1949 to realise that the enormous expansion of the control of nature during the last decade as not led to any immediate actualisation of world-harmony. On the contrary. In many ways it has stimulated and exacerated discord and division.

But this contradiction evaporates once we make a genetic nd dialectical approach. We can then see how the fears and piritual divisions of primitive men (most plainly expressed in

[18] Waldo Frank keeps the basic Marxist idea before him when he speaks of 'the historic sense of mankind, implicit in Marx, as of a body which, like all organic life, evolves by reason of inward assimilations of an objective world from which it wins sustenance and on which it reacts—all according to a pattern which is the nature of the organism: a pattern which in man is capable of great variation chiefly through the process of what, vaguely, we call consciousness.'

the notion of the External Soul) lead to intellectual dichotomies and to emotional conflicts, which are linked with various extensions of discord and conflict within the group as well as with the development of techniques. There is a very complicated issue here, which we shall solve fully only by a unitary anthropology and psychology. Enough for the moment to point to the fact that productivity develops in its early stages through a difficult process of dissociation of personality and conflict (class-division) inside the group. The forms of thought and the modes of technique are not something which grow up innocently alongside this difficult process, free of all its limiting and distorting factors. On the contrary, they are implicated at the heart of the process in which integration and division are inextricably welded.[19]

When we speak then of men's relation to nature, we are not speaking of some transparent and passive relation or contact. Rather we are speaking of a relation which involves on the one hand the objective factor of successful techniques and processes, and on the other hand the subjective factor of a method of knowledge. The latter is inseparable from the level developed by the whole-man; and in historical fact the movement of separation from nature has included not only an objectifying and abstracting power of mind but also a dissociation of personality (which we discussed in Chapter 1).[20] The result is a complex dialectical development in which personal, social, economic, cultural, technical aspects are indissolubly bound—though we can detach them to some extent for the purposes of analysis.

This point is fundamental to the understanding of Marx's thought, and his profound effort to grapple with the dissociative forces in capitalist culture, the fetishistic distortions of human emotion. Marx at every point understood how his economic

[19]This is correctly stated by Cahen, 'This conception (Nilke's) of a Spiritual being corresponds very exactly with that which K. Marx conceived of man . . . By this action and reaction man is progressively united with nature, while he integrates it in himself, humanising it, adapting it to his needs and to his mode of life . . . It is necessary to integrate oneself in reality in order to transform it,' 161.

[20]And at the end of Ch. 7. I have only touched on this aspect in this book: it is one of the key-issues in Marxism and needs lengthy examination. Marx has throughout as a central guiding concept the realisation of the split inside man as integrally related to productive levels and social forms. His analysis of Value and Surplus-Value involves it at every point. (That analysis, in my terms here, reveals the basic instability in the capitalist system, the way in which capitalism must keep on extending its pattern till the prägnanz-limits are reached.)

analysis was bound up with a struggle against dissociation of personality; and it is the precise fact that he sees the two aspects as indissolubly one, which gives his thought its great prophetic sweep. The unity of his thought in these matters can only be grasped along some such lines as those I propose.

X

These remarks are not intended as solutions of the problem. They are given as the merest indicators of the lines along which any attack on it must now proceed. They will, however, perhaps suffice to obviate misunderstandings as to the Marxist concept of the unity of man and nature as the larger whole in which the unity of individual and society (a unity which includes endless divisions and differentiations) works itself out

True, we must look inside society to find the structure of its movement—and that is the aspect of the truth which was stated metaphysically by the Hegelian category of self-movement. But the way we look is changed when we have once fully grasped the significance of the larger whole. The problem of techniques, for instance, is seen in a fuller context, and we must explore the meaning of Marx's dictum that man produces in accordance with the laws of beauty. That is, we must gain a clarified concept of the fusion of organic and productive processes. And once we do that, we see the weakness and fallacy underlying all mechanist phraseology such as Structure plus Superstructure, or Man interacting with Nature, and so on. We must proceed to an adequately active concept of the function of spirit—the way in which it facilitates the whole formative process of human life

And once again, if anyone asks why Marx and Engels didn't carry their definitions further along those lines, the answer is plain. They had at their disposal the sciences of their day, and not those of ours. Biology had not even begun effectively to link the cell-analysis with problems of evolutionary selection; anthropology was making its earliest, almost, start, since there was no way of raising the problem of totem and taboo—the problem of how to relate primitive cultural and economic processes. And psychology was still in a weak empirical stage. Physics did not even suspect the problems of transformation awaiting it. Marx and Engels made full use of all the scientific method and material at their disposal, and their intuition leaped far ahead to grasp the essential unitary points out of which the

next dialectical integrations could be achieved What more would have been possible?

All that I need further assert here is that the unitary approach enables us to make sense of the relation between the economic and cultural levels in society. We can trace as aspects of a single process the prevailing scientific ideas and the forms of technique, the cultural forms of self-expression and the social formations. In dealing with class-societies we see class-forms as simultaneously providing the basis of cohesion (since they are the most effective modes at that stage for a maximum-control of nature) and the basis of tension and antagonism (since the changing forms of techniques and exploitation shift the emphasis of Dominance and put new potential virtues of human advancement in the hands of one section or class to the detriment of others). As one class finds that its forms and methods are in increased harmony with the Organising Process, the opposed class loses its effective relation to Dominance and sinks towards static formations more and more out of key with the formative process. The clue to new active differentiations and dominances passes into the hands of the newly emerging class, who shape control and develop productive techniques and methods, and play an essential part in facilitating new cultural formations.[21]

These words must be taken only as a brief sketch of the way in which a process-logic will tackle the various aspects of social and cultural development, and relate them to a single human process. But the whole direction of my argument will have been missed if it seems that in all this we are merely considering and playing about with ideas on the abstractly intellectual level. The ultimate dynamic of all these concepts of unity lies in the movement of the peoples of the world at this moment into unity, into socialism; a movement against all the divisive factors of capitalism in its present bloodily convulsive state, which threatens the destruction of the earth by nuclear fission. The form of thought I am putting forward is alive and will prevail to the extent to which it realises that unity, that unity of men with men and of man with nature. To that extent it is the form of thought of Marx and Lenin. The release and co-ordination at which it aims can reach their first full activity only in that world-unity, that revolution of the hand and the

[21]The crucial moment in the transition from one dominance to another will appear in a violent *structural* disequilibrium (class-conflict) with clashes of moral ideas, cultural attitudes, etc. This terminology is essentially in the key of Marxist-Leninist theory, which put *more emphasis on the real formative power of the idea* than any other philosophy does.

spirit against all which seeks to reduce men to things. But, to the extent to which it apprehends reality, it must work to facilitate that revolution.

XI

All development, it will be clear, involves transformations of some sort, large or small. But we may distinguish on the one hand the normal facilitation of a system, its tendency to extend its form by a repetition of the process by which it was formed; and on the other hand the Critical Points, the moments of decisive shift in integrative levels.

In the latter a shock occurs which brings out such a violent disequilibrium or a-symmetry that only the leap into a new organising process will serve to save the organism from collapse. The extreme strain begets either death and disintegration or a new centre of organisation. In point of evolutionary fact, what now seems to us a violent leap in levels has probably been brought about in a much more gradual way, so that the system is able to sustain the shock of the new dominance emerging. But this is only one more problem towards the solution of which this book hopes to point the way. If our discussion begins to clear the ground, it does all that can be expected at the moment.[22]

XII

Well, then, an end. I have finished my effort to bring together in terms of the contemporary situation the Marx who wrote that commodities were produced according to the laws of surplus-value, etc., and the Marx who wrote that man produced according to the laws of beauty. In the full movement of Marx's thought the two aspects are fused; but in order to develop Marxism adequately in our own world we must rediscover the lines along which that fusion operates.

[22]Since writing the above, I note that Maurice Dobb finds it easy to fall into very much the terminology here advocated. Marx sought 'to show the (capitalist) system as composed simultaneously of equilibrating and disequilibrating elements; any situation where the former predominated tending periodically to pass over into a situation where the latter predominated. Economic reality for Marx was essentially movement through oscillation and interaction, in which stability and instability represented simply contrasted extremes of tempo,'

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